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Want to match the right people
to year 2000 projects? Check out
this test. Page 81

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NT to shed WAN routing limits

By Laura DiDio

MICROSOFT CORP. is gearing software designed to deliver wide-area routing capabilities to Windows NT Server 4.0 and 5.0 networks, obviating the need for traditional hardware-based routers, Computerworld has learned.

Code-named Steel Head, the package could save businesses thousands of dollars compared with the cost of hardware-based routers. Pricing on stand-alone routers ranges from about \$1,000 for an entry-level device to \$15,000 for a fully loaded product such as Cisco Systems.



Microsoft's Steel Head is
"much more comprehensive"
than stand-alone routers

Inc.'s 7500, which includes built-in network management.

Early beta-tests of the

Steel Head software will ship to a limited number of sites next week. A Microsoft spokesman confirmed the existence of Steel Head but declined to divulge product specifics.

Industry analysts who have been internally briefed and three users who have tested alpha versions of Steel Head for the past month said the WAN routing software will eliminate one of the most glaring limitations of NT Server.

Microsoft and several third-party suppliers already ship a wide range of remote access WAN routing. [page 14](#)

If Microsoft succeeds in getting rid of the whole
Netscape web browser
charge nous \$500 for
Navigator and \$5,000
minimum for Web
server software.



Gates gaining Internet ground

► Microsoft called upon to innovate, not 'extend'

By Kim S. Nash

IN THE YEAR SINCE he declared himself "hard-core about the Internet," Bill Gates has swung the 13,000-employee, \$8.7 billion Microsoft Corp. battlefield to face the online realm head-on.

In its wake, Microsoft developed a string of products that users wouldn't have seen other-

wire, such as the revamped, Web-enhanced Windows interface due to ship next year.

Microsoft "didn't see the Internet happening as fast as it did. But they recovered and brought out a lot of new products a lot faster than they used to," said Mike Albert, chairman of the Web advisory board at Bechtel Group, Inc., in Houston.

[Microsoft, page 13](#)

Network costs may dilute NC savings

By April Jacobs and Bob Wallace

NETWORK COMPUTERS may be touted as the latest weapon in the war to control desktop costs, but supporting them on the server and the network side of

the equation could neutralize their punch.

Users of network computers will have to bulk up their LAN and WAN infrastructure, even though the cost could easily wipe out anticipated savings

associated with buying the lowest-cost boxes rather than PCs, according to interneetworking vendors.

"The reason X terminals didn't take off was because the infrastructure was hubs and routers and couldn't support the traffic. Didn't everybody complain about the lack of bandwidth when they wanted to run remote graphical applications back then?" said Trent Waterhouse, program manager for LAN switching at Cabletron Systems, Inc., in Rochester, N.H.

Bob Newman, vice president [Network costs, page 14](#)

SPARKS FLY IN JAVA WAR

Microsoft tries to stomp Sun's thunder. [Page 3](#)

MIXING UNIX AND NT

Products boast operating system integration. [Page 6](#)

Psst! Got a laptop?

SHORTAGE OF PORTABLES WORSENS. [PAGE 16](#)

MICROSOFT, NETSCAPE ACTUALLY AGREE

Vendors decide to work on one version of JavaScript. [Page 129](#)

UP FRONT

Standards sham

As Microsoft approaches the first anniversary of its Dec. 7, 1995, bear hug of the Internet, the company is demonstrating that its supposed commitment to open standards is a facade. Microsoft likes open standards only to the extent that they promote the sale of Windows, and it's clearly willing to take any standard proprietary that threatens its desktop hegemony.

The latest move is Microsoft's announcement of a native code compiler and set of class libraries that will run Java applets a lot faster — but only if they're optimized for Windows. From a commitment to the Java standard, that tactic is an effort to splinter and confuse the Java community. Remember that Microsoft would just as soon see Java go away. If developers swallow that Kool-Aid, they will give Microsoft its wish. In the process, they will also undermine the goals of platform independence and user choice that have driven the Java push.

There are two things that are cool about Java: the ability to dynamically download applications from a server and the flexibility to run them on any intelligent device that supports Java. Through its NeXT acquisition and Java initiative, Microsoft seeks to limit that second option to Windows machines.

Developers must remember that platform independence is a virtue

Machine initiatives are reminiscent of the tactics of FUD (fear, once, twenty and doubt) that IBM used so effectively in its heyday. Users are warned off new technology because of the risk of incompatibility with the old technology. And the vendor keeps the old technology target moving, so compatibility is always a question.

But we've been down this road before, and we should learn from history. Developers must remember that platform independence is a virtue. Netscape, Sun and others need to deliver Java virtual machines that improve Java performance but also adhere to the open standard. Most of all, users should remember that open standards promote competition, and they should insist their vendors stay the course.

Paul Gillin, Editor
Internet: paul_gillin@cm.com

THE FIFTH WAVE

BY RICH TENNANT



IS juggles data marts

By Craig Stedman

DATA MARTS are surging in popularity as the cost of full-scale data warehousing speaks users. But some IS managers find they must build even the scaled-down departmental warehouses on the cheap as part-time projects.

Even with the advent of data marts, selling a warehousing project to senior management is often a tough prospect because it is hard to quantify any fast bottom-line benefits that a warehouse would produce, according to information systems managers and industry analysts.

As a result, data marts often are hatched as proof-of-concept projects within IS. Several data managers said that meant they could work only part-time on the projects while handling other duties. That juggling act made it hard to keep the data marts from slipping off schedule, they said.

San Diego Gas & Electric Co. learned the lesson that part-time projects don't do well to pull off. Its six-month schedule for developing an initial 2.5-gbyte data mart stretched out to nearly nine months partly because those doing the work also had

CROWD PLEASERS
Data warehousing uses that appeal to corporate management:

- Finding all purchases made from a vendor to help in negotiating lower prices
- Discovering customer buying habits to allow for more targeted marketing
- Accountability analysis to show the performance of individual departments

Source: The Data Warehousing Institute, Bethesda, Md.

other commitments, said Jonathan Wiltshire, data administrator at the utility in San Diego.

"You don't need many people [to build a data mart], but they need to be focused on that specific project," he said.

Robert Groeger, data warehousing project leader at Ingram Book Co. in Laverne, Tenn., said it took the book distributor a year to build a 2-gbyte data mart pilot. After a month of limited use, IS still "hasn't really advertised it to users," he said.

Until October, Groeger said he could spend only about 20% of his time on the data mart. Most of his work hours had to be given over to administering Ingram's mainframe database. That didn't change until the

IS department finally got management's blessing for the data mart. "Now we want to stay proactive," Groeger said, adding that the firm expects to increase its cache of warehoused data to 50-gbytes within six months.

Wayne Eckerson, an analyst at Patricia Seybold Group in Boston, said two-thirds or more of the data warehousing projects he sees are grassroots endeavors that start "under the radar of top management." Outside of some CEO-pleasing applications in vertical industries such as retail and credit cards, warehouses and data marts remain a tough sell for IS, he said.

■ Data mart tool vendors
Read market, Page 53

Tool kit links Cabletron, CA platforms

By Patrick Dryden

INTegrating their separate management platforms, Cabletron Systems, Inc. and Computer Associates International, Inc. hope to offset each other's weaknesses and give managers more complete control over enterprise networks.

Some analysts and users applauded the introduction last week of a tool kit that installs the policies, scripts and upgrades needed to link CA's Unicenter systems management suite with Cabletron's Spectrum network manager. The free kit, available now from CA, saves users from doing the work themselves when they want to share management information among tools and support groups.

Spectrum has always been a network manager's tool with many systems management add-ons, and Unicenter is a data center suite that needs network support. "so linking them can give users a more complete so-

lution," said Dave Passmore, president of Decays, Inc., a consultancy in Sterling, Va.

Now all events and management actions can be passed automatically between the two platforms. Operators can click on an alarm to examine a problem from the point of view of either console.

That means help desk staffers can monitor both systems and networks to assign a problem to the right group. Unicenter operators can schedule tasks and handle trouble tickets that span

network, systems and database functions, for example.

One Unicenter user was glad to hear about the Spectrum integration because he may want to replace his current software, OpenView Network Node Manager from Hewlett-Packard Co.

"This gives me an option down the line in case we get fed up with HP's skyrocketing maintenance costs and poor service," said Tracy Adams, manager of technical support at Central Vermont Public Service Co. in Rutland, Vt.

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MORE THAN ONE MASTER. What should you do when your employer misleads? Don't ban it — manage it. Senior editor Alison E. Alter leads the discussion. www.computerworld.com/forum

DRILLING FOR DATA. Some tips on how to decipher the buzzwords in the decision-support arena, a review of four OLAP tools and an exclusive online user survey. www.computerworld.com

Sun seeks a better Java for Windows

By Sharon Gaudin

SUN MICROSYSTEMS, INC. — facing a new attack from Microsoft Corp. on the Java front — is under the gun to make Java run better on Windows.

That's part of the vendor's plan. The question is whether it will be enough after efforts by Microsoft to entice developers to write Windows-only Java applications.

Sun on Tuesday will unveil its Java Development Kit (JDK) 1.1, new Java products and an Electronic Commerce Framework from JavaSoft.

The company is keeping most of the details under wraps, but Computerworld has learned that several improvements are on the way. The upgrades are aimed at giving Java an advantage in the battle against Microsoft's ActiveX and Microsoft's attempt to develop a Windows-

specific version of Java.

"A lot depends on what Sun comes out with," said Patrick Connolly, president of Investors Edge, a management company that runs an investment site on the World Wide Web. "Sun has to prove that they have written with Windows in mind, and not just as a second thought. If they have, people will stay with them."

Microsoft is working on a native-code compiler for Java, which would let developers build Java applications that run faster on Windows — but only on Windows. Much of the excitement generated by Java has been based on the fact that it is cross-platform.

"I think they're missing the big point. They're dividing up the nature of Java," Connolly said, referring to Microsoft's strategy.

But Scott Wingo, co-founder

of Stingray Software, Inc., a Chapel Hill, N.C., firm that develops Java-class libraries, said he is eager to have the choice — cross-platform or Windows power.

"The Windows market is 90% of what people are going to be using Java on," he said. "By tying it to Windows, it makes it so much more powerful, and you still lose 10% of the market."

Sun's JDK is a tool set that lets developers build applications. It also includes the code that lets computers run Java applications.

The expected changes in JDK 1.1 include an enhanced programming interface for digital signatures and access control lists, which will improve Java's security; better integration with the Windows interface; Java Archive, a file format that merges many files into one so they can be downloaded faster; and Allowable Method Invocation, which allows Java objects to be invoked from Java code running in other virtual machines.

"The improvements are going to be very helpful," said Paul Mahowald, vice president of retail development at Blackbuster Entertainment Corp. in Tampa, Fla. "The competition is Microsoft's ActiveX, and the faster they can make Java, the more competitive Java will be. ... I'd use Java more if it was faster."

IBM ups CMOS performance with new high-end model

By Tim Chudette

IBM NEXT WEEK will break out a heavy hitter in its line of CMOS-based mainframes.

The RX4, a 10-way S/390 mainframe, will increase performance over the current RX4 CMOS 10-way model by up to 10%, IBM officials said. The new boxes could reach 360 MIPS, according to industry sources. IBM declined to discuss specific pricing of the new mainframes.

BREAKING THROUGH

IBM customers who run the RX4 models will be able to upgrade to the RX4. These systems are normally used for very high-level computing needs, including data and transaction-intensive applications.

"A 10% boost is significant for the small number of users that may be pushing the upper bounds of their current 10-way systems," said John Young, an analyst at The Cliper Group, Inc. in Wellesley, Mass. The announcement puts pressure on Hitachi Data Systems Ltd. and shows that IBM still leads the way in CMOS processor production for mainframes, he said.

CMOS-based mainframes reduce energy and mainframe costs. They have yet to match the computing power of water-cooled models, but they are expected to soon.

Users have expressed interest in seeing CMOS performance improved as many shops turn back to mainframes to handle a lot of their network processing needs [CW, Nov. 2].

For some users, a 10% boost can be significant

—John Young,
The Cliper Group

The RX4 processors aren't a new design; they are chips based on IBM's current CMOS development.

The RX4s have faster cycle times than required in the current RX4 processor specification. With a limited run of those processors, a limited number of RX4 units will ship. Meanwhile, IBM is gearing up to introduce another CMOS line next year. The RX4 and RX4 are part of IBM's new line of mainframes announced Sept. 10.

Novell gives GroupWise Java-enabled client

By Barb Cole

NOVELL, INC. GroupWise users will soon find better hooks to the Internet in their client/server messaging system.

Novell at the Internet World trade show later this month is expected to discuss plans for a Java-enabled World Wide Web client for GroupWise, and a more Internet-friendly version of the messaging system.

The Java-enabled client is expected to have a more polished user interface that more closely resembles GroupWise 5.0 than the company's Web Access. That product provides access to mail from browsers, sources said. The new client software also is expected to come with several Java applets, including ones for logging in to the messaging system, an address book, a mail viewer and a calendar.

Novell confirmed it is beta-testing a Java-compliant Web client that will ship in the first quarter next year but declined to provide specifics.

GroupWise has mediocre integration with the Internet. Its

THE GROUP	
New GroupWise users worldwide for the first half of 1996	
Lotus Notes	10M
Novell GroupWise	755,000
Microsoft Exchange	70,000
Source: Information Week	

Web client lets users check mail over the Internet but doesn't support attachments. That limitation reportedly will be eliminated from the Java-enabled Web client.

On the server side, GroupWise users must manage error-prone gateways to exchange mail between GroupWise and the Internet. The next GroupWise upgrade will support Internet Message Access Protocol 4, which will eliminate the need for such gateways at many sites.

Besides a Java-enabled version of its Web client, the long-term plan for GroupWise includes making the components such as mail and calendaring — available as Java applets, sources said.

CW Q&A:Tad Williams

By Mitch Wagner The 21st century is half over. All over the world, billions of people work and play by connecting their minds to the global computer network, injecting themselves into virtual reality. But suddenly virtual reality is an unsafe place. A young boy in South Africa falls into a coma because of something he encountered in virtual reality, and his older

sister — a graduate student studying computer science — teams up with a small, worldwide band of Internet users in an attempt to find out what happened.

That's the story of *Otherland*, the latest work from Palo Alto, Calif., novelist Tad Williams. But *Otherland* isn't just a frothy adventure story. It explores the roles of computers and

Tad Williams, page 80



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Shiva to leap ISDN hurdles for users

► Service makes vendor the middleman

By Bob Wallace

AUTHORITY ACCESS giant Shiva Corp. last week announced a service to take over the often long and onerous task of ordering and provisioning Integrated Services Digital Network (ISDN) lines for users.

Provision Plus lets users deal with Shiva for their remote access equipment and ISDN line needs rather than having to order the links from local telephone companies and the equipment from Shiva.

"Anything that streamlines the ISDN ordering and provisioning process is welcome and well-coming with open arms by us," said Daniel Silver, president of TeleChoice, Inc., a consultancy in Vernon, N.J. "Shiva has experience with this tough process — experience that most users don't have or don't want."

With Provision Plus, users

can order ISDN Basic Rate Interface (BRI) lines, which provide 144K bit/sec. of capacity, and/or ISDN Primary Rate Interface (PRI) lines, which provide 1.544M bit/sec. of bandwidth. The service includes the following:

- Loop qualification: Shiva finds out whether ISDN is available in the user's area. If not, Shiva will find out what it will cost the local carrier to install ISDN.
- PRI and T1 provisioning: Shiva initiates the ISDN BRI line order for a business or home and will test the line to ensure that it is operating.

- PRI and T1 provisioning: Shiva initiates an ISDN PRI line order and tests the lines.
- Provision Plus is available monthly for \$10 per line and includes a 30-day warranty. It doesn't cover the actual installation and maintenance of the line, which still must be handled by the local carrier.

Vijayan honored

COMPUTERWORLD senior editor Jayakumar Vijayan has won the Public Relations Society of America's Award for Excellence in Technology Journalism.

The group honored Vijayan for his two-part series on Indian programming companies. "Look out, here comes India," in the Feb. 26 and March 4, 1996, issues. The series was one of two wins selected from 60 entries, the organization said.

This is Computerworld's 21st editorial award this year. Other



Airlines, Inc.'s World Wide Web site, www.flycontinental.com, the site was developed by OnRamp, Inc., not Electronic Data Systems Corp. Ticket sales on the Web will be available by year's end, not last October. And the Web site will connect to SystemOne/Amadeus, not AMR Corp.'s Sabre system.

The article "Multimedia drives training at Marine Corps" [CW, Nov. 4] incorrectly stated the location of Camp Pendleton. It is in Southern California.

Corrections

The story "Retailers move ware online" [CW, Oct. 7] contained several errors about Continental



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Users struggle with Unix/NT integration

By Jalkumar Vijayan
and Laura DiDio

A SLEW of emerging Windows NT/Unix integration packages promise to make coexistence easier by mid-1997.

But getting it all to work could prove challenging. Cross platform integration is a crucial issue for many Unix shops that are installing Microsoft Corp.'s Windows NT.

"At this point, trying to forge connectivity between Windows NT networks and large Unix systems in a kludge beyond belief," said Michel Vallières, interim department head for physics and atmospheric science at Drexel University in Philadelphia.

But in the past few months, at least a dozen vendors have announced a mish-mash of products for Windows NT and Unix systems (see story at right).

Users and analysts said these should ease some of the more obvious obstacles to integration. But differing approaches and incomplete or evolving standards

could pose problems.

One information systems manager at a Chicago-based insurance firm said melding his heterogeneous environment of 18 Unix servers and 200 Windows NT Workstations has been "a major pain."

"Yes, there are integration packages, but they don't give us easy, transparent access — there always seems to be a glitch lurking just around the corner," said the IS manager, who requested anonymity. His firm is "crossing our fingers and praying" for a unified version of Unix, called Merced, to become commercially available.

"That would allow me to mix and match my Unix and NT hardware with any application," he said.

Other issues that are likely to trip users include Windows NT's relative lack of wide-area connectivity, the portability of Unix applications to a Windows NT environment and the reha-

lack of centralized management and middleware tools to manage the dual environments.

"Issues like these are why we are instead trying to think about integrating the two environments," said Steve Rounds, a controller at Security Forces, Inc. in Charlotte, N.C.

Users must be careful or they "could end up trying to paint a solution with a palette of mismatched colors," warned Dan Kuznetzky, an analyst at later National Data Corp. in Framingham, Mass.

"You must ensure that you have common communication protocols, common middleware and consistent database management tools" before attempting to meld two environments, Kuznetzky said.

COULD BE BETTER

David Pensak, senior research fellow for computer technology at Du Pont Co. in Wilmington, Del., said the current state of Windows NT/Unix integration is "adequate" but leaves a lot to be desired.

Pensak added that despite the type from Microsoft, he still isn't sure of Windows NT secu-

Vendors push coexistence

Several vendors are announcing — or expanding — products and services aimed at easing Windows NT/Unix integration.

Microsoft has started making application programming interface (API) for the Windows NT operating system available to Unix developers. The idea is to foster development of shield-wrapped Windows applications for Unix systems. Among those that have licensed the APIs are Bristol Technology, Inc. and Intergraph Software Systems.

■ Digital Equipment Corp. and Hewlett-Packard Co. have announced a series of cross-platform products and services for Windows NT/Unix integration.

■ Several Unix vendors are providing NT ports for their network management software. Among them are HP with OpenView, IBM with NetView and Siemens Nicsys Informationssysteme AG with Tranview.

■ On the hardware side, Tandem Computers, Inc. and Siemens Nicsys are developing clustering technology that will let administrators tie Unix clusters to Windows NT clusters.

■ SCO, Inc. continues to expand its VisionFE software for file-and-print sharing between Unix and Windows NT.

— Jalkumar Vijayan



EDS considered SCO
but went with NT

"That would allow me to mix and match my Unix and NT hardware with any application," he said.

Other issues that are likely to trip users include Windows NT's relative lack of wide-area connectivity, the portability of Unix applications to a Windows NT environment and the reha-

lity. "There's so much about NT that hasn't been tested to the level of Unix. It makes me very cautious as I deploy it in a mixed Unix environment," Pensak said.

Vallières is one user cramped by the current lack of WAN access capabilities on NT. For the moment, the university is employing the X-Windows protocol to let Windows NT systems access data on its Unix servers.

Electronic Data Systems, Inc. in Detroit implemented an all-

Windows NT Server and workstation network as the linchpin of its initiative to link General Motors, Inc.'s 8,500 car dealerships nationwide.

"We did but decided to go all-NT because the Unix environment lacks support for Windows 70 and 32-bit application tools, and there weren't enough remote administration tools," said Wayne Stein, project manager of the General Motors Access program at EDS.

Users get answers to MQSeries management issues

By Tim Ouellette

USERS INSTALLING IBM's MQSeries middleware are running into system management roadblocks, and third-party vendors are responding by offering a slew of add-on products and services in the coming months.

MQSeries ensures delivery of data among applications on different platforms via queued data messages. As a result, users don't lose data when a server or connection is down because the data message remains in a queue until the connection is open again.

For example, Businesses Northern Santa Fe Corp. runs MQSeries across different MVS systems but needed to monitor the nodes without the time delay of starting a terminal session for each MVS system.

An MQSeries manager at the

Fort Worth, Texas, railroad said the company turned to management software from Boole & Babbage, Inc. in San Jose, Calif., to look at MQSeries nodes across different platforms.

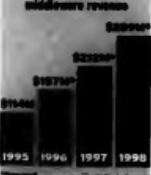
As more users push beyond testing and connect more applications with MQSeries, users need help properly designing and managing their MQSeries-based networks, said Colin Osborne, MQSeries business manager at IBM.

IN THE WORKS

Vendor plans for MQSeries-related packages include the following:

- Boole & Babbage next month will ship MQAlert, the last piece of its MQSeries administration and management suite called Command MQ.
- Digital Equipment Corp. next April plans to release DECmesageQ 4.0, middleware that has

Worldwide message-oriented middleware revenue



Source: Gartner Securities Data Corp., Fremont, Calif.

additional features to link its messages to MQSeries.

■ Planeworks, a New York subsidiary of Tangent International, by year's end will ship a tool kit that lets developers link Java applets to MQSeries.

■ Level 8 Systems, Inc. in New York early next year will ship gateway software to send messages between MQSeries and Microsoft Corp.'s pending Falcom middleware for Windows NT.

Observers said the rush of third-party vendors around MQSeries shows how much IBM's presence has affected the market.

"At the high end, for anyone with an MVS box, MQSeries is a viable option," said Sally Cackson, an analyst at The Standish Group International, Inc. in Dennis, Mass. "You now have a lot of strong players in the after-

market and top-notch people at these companies."

For example, several of IBM's MQSeries staff members moved over to Candle this fall as the Santa Monica, Calif., firm unveiled a new focus on MQSeries products and services.

Cusack warned that these early attempts by third-party vendors to add value to MQSeries may be a little overpriced as users begin to decide how badly they need to purchase additional products. But users should welcome competition between heavy-hitters such as Boole & Babbage and Candle to get the best deal, she added.

And some users could bypass middleware because transaction monitor products are beginning to add MQ-like messaging, too.

— Delta files with MQSeries-based apps, Page 53

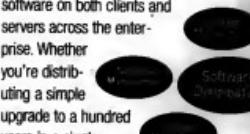
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Sorting information overload

IBM project aims to better focus access to text-based data on Internet

By Julia King

EVERY DAY, hundreds of thousands of users key search words into Internet databases only to be deluged with millions of mostly useless references.

Most of the data electronically stored — about 80% — is in the form of text documents. But without a better structure, it is impossible for users to read through even a small fraction of it.

That is the business dilemma a Paris-based team of IBM developers is trying to solve with a new set of technologies that incorporate linguistic and mathematical data analysis and graphical navigation techniques.

Collectively known as IBM Text Navigator, the technologies were designed to help companies manage a rising tide of Internet-based documents ranging from newspaper articles and industry research reports to, potentially, free-text answers to

opinion surveys that customers submit electronically.

Tools on the market today, from companies such as Arbor Software Corp. and Cimshare, Inc., focus primarily on data mining, a more mature technology than text analysis. Mining lets users find hidden patterns in point-of-sale and customer credit records and other data. The main goal of text analysis is to discover key features in col-

Users can see an Internet-based demo of IBM's text analysis technologies as it structures 600 news articles from an Arkansas newspaper. The address is direct.boulder.ibm.com/itsecn/cademne.htm.

lections of unstructured free-text documents.

IBM is working with mostly European users on a custom basis. The firm said a commercial

product is about 18 months away.

"This goes beyond information retrieval," said Herb Budd, general manager of decision-support solutions at IBM in Paris. "What we're doing is taking natural language text and building a set of applications that will allow people to understand what the text is about."

ORGANIZING COMPLAINTS

One recent pilot involved analyzing complaints letters from customers of a European mail-order retailer. Using the analysis tools, the letters were clustered into groups, which enabled the retailer to better understand the major reasons for customer dissatisfaction.

In the U.S., IBM has used the tools to analyze free-text submissions from students who entered a \$1 million contest to develop educational tools and materials for the Internet.

More than 3,000 students submitted proposals to the

INFORMATION OVERLOAD

A recent survey of managers uncovered some negative effects of information overload:

■ 33% suffer ill health as a direct result of information overload

■ 44% believe the cost of collecting information exceeds its value

■ 43% report delaying important decisions because of too much information

SOURCE: BCA/BIS Business Information, New York

ThinkQuest competition. Their proposals, amounting to hundreds of millions of words, were entered into a database, which was subsequently structured into five categories, using the IBM technology.

"With another search engine,

you might ask for something in math, and instead get random finds it," and beta tester and ThinkQuest sponsor Allan Weiss, president and CEO of Advanced Network & Services, Inc. in Armonk, N.Y.

By comparison, "you looked at the whole database and structured it for us. The output was very usable," Weiss said.

Scalability is another key dif-

ference between tools now on the market and the IBM technologies, according to Budd.

"Many algorithms that do classification run out of gas at about 50,000 objects," Budd said. "Ours scales up to millions of objects."

Once a product does hit the market, analysts predict a high level of user interest.

Even with corporate systems, people have been concerned with information overload. The Internet makes that problem "orders of magnitude larger," said Clare Gillan, vice president of application research at International Data Corp. in Framingham, Mass.

SHOTS

Oracle falls off Bandwagon

Oracle Corp. has scrapped plans to release a software server suite, code-named Bandwagon, that was supposed to be its answer to Microsoft Corp.'s BackOffice. Sources close to Oracle said it changed gears to focus on a recently announced NetSolutions software bundle for developing network computing software.

StorageTek pings virus

Storage Technology Corp.'s Network Systems Group is offering a filter for its firewall products that protects systems from the Ping of Death hacker tool. The Ping of Death can crash or reboot systems via a ping message. StorageTek's filter, downloadable from www.storage.com, allows only certain sizes of data packets to enter the system, keeping out larger Ping of Death packets. The software is free but must run with StorageTek's BorderGuard or Passport firewalls.

RS/6000s fly at Boeing

The Boeing Co. is installing 1,500 IBM RS/6000 workstations as part of an effort to port some of its Cadle computer-aided design applications off the mainframe. The Seattle-based airplane manufacturer designed its new 777 plane completely with Dessault System SA's Cadle software.

Best to host catalogs

Best Internet Communications, an Internet service provider in Mountain View, Calif., today

plans to announce a new service that will let companies put up catalogs of their products and services on Best's servers using software from iCAT Corp. Users can administer the catalogs remotely using client tools developed by iCAT.

CA offers GUI tool

At DB/Expo '90 in New York this week, Computer Associates International, Inc. plans to announce a Windows 95 and Windows NT-based authoring tool for adding multimedia user interfaces to character-based applications that run on midranges and other host systems. The Opti software, which costs \$995 per copy, will include CA's OpenWindows/Desktop personal database as a local cache.

IBM rolls out 'net servers

IBM last week announced new Internet server packages based on the RS/6000 platform running AIX 4.3. The Cluster Internet PowerArchitecture servers bundle IBM's High Availability Clustered Multiprocessing software and ready-to-run Internet applications options. Prices will range from \$60,000 to \$65,000.

SHORT TAKES New York Life Insurance Co. has launched a World Wide Web site at www.nyylife.com that lets visitors do retirement planning calculations and research mutual funds. ... Apple Computer, Inc. appointed Joseph Kiere to the new position of chief information officer. He will report to Fred Anderson, executive vice president and chief financial officer.

Political favors won't help get most federal IS jobs

By Gary H. Antcher

WASHINGTON

THIS BOOK has a cherry-red cover this year, but people still call it the "Plum Book" — the quasidemial compendium of federal government jobs available by political appointment.

But IS managers won't find much fruit to pick in the 265-page book.

A search of the book's 8,000 positions revealed just 40 jobs with words such as "computer," "information systems" or "chief information officer" in the job title.

Most government managers worked their way up through career paths, said Jerry McFarland, a computer scientist at the U.S. Geological Survey in Reston, Va. "But the Plum Book is coming in from the top down. The two don't have much intersection," he said.

"Senior computer profes-



Jerry McFarland
"The Plum Book is coming in from the top down."

U.S. Government Policy and Supporting Positions, the book is published by the House Committee on Government Reform and Oversight and is available for \$40 on paper or free at www.house.gov/reform/plum.htm.

Testing matches right IS person to right job. Page 81

Oracle7

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Operating Systems	Oracle7	Microsoft SQL Server
NT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HP-UX	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sun Solaris	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NetWare	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IBM AIX	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IBM/MVS	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OS/2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Digital OpenVMS	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sequent DYNIX/ptx	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Basis intranet system gains Windows NT support

► Document management package runs on less costly servers

By Justin Hibbard

INFORMATION DIMENSIONS, INC. is opening the floodgates on its Basis document management system so webmas-

ters can pour documents into Windows NT-based intranets.

The Dublin, Ohio-based company this week will roll out a Windows NT version of Basis Intranet Solution.

Previously available only on Unix, OpenVMS and MVS platforms, the package includes the Basis Document Manager for storing, indexing and retrieving documents and the Basis Web-server Gateway for sending documents from the Document Manager to a World Wide Web server.

BILL JOHNSON, president of Technology Concepts & Design, Inc., a consultancy in Washington, said the real value of the NT-based version of Basis is that Intel Corp. processor-based servers that run Microsoft Corp. Windows NT are far less expensive than RISC processor-based servers that run Unix.

"The question is, can you really support a 10G-byte database on NT?" Johnson said. "So far, it seems to work."

Johnson evaluated the NT-based system for several clients and found that Basisplus, the extended relational database in the Basis Document Manager, performed well on servers that range from 133-MHz Pentium-based processor-based desktop PC to 400-MHz Pentium Pro processor-based PC server.

Users who run Basis Intranet Solution on Unix servers also reported satisfaction. The Tufts University Health Sciences Library in Medford, Mass., hosts the Basis system on a Sun Microsystems, Inc. SPARC server.

"The fact that Basis had the Web server integration attracted us," said Susan Albright, project manager at Tufts. "We have people who are across institutions or off-campus who need to get access [to documents in Basis]."

ACCESS ON DEMAND

The universal access afforded by an intranet is the main reason users are connecting document management systems to Web servers, said Carl Frappolo, a consultant at Delphi Consulting Group, Inc. in Boston.

"Suddenly, the information stored and managed in their document management system is opened up to the entire corporation," Frappolo said. "It allows them to start thinking about opening up the information to people outside the corporation, like their customers and trading partners."

According to Gartner Group, Inc., more than 95% of the information in enterprises is in the form of documents, and roughly 80% of those documents sit on desktop hard drives. An intranet coupled with a document management system is an effective way to free those documents, said Jim Bair, a Gartner analyst in San Jose, Calif.

But companies should buy document management systems only from vendors with a history in the field, according to Bair.

"Everyone gives lip service to document management, and then they buy from a vendor that has no experience, like Microsoft," Bair said. Information Dimensions, on the other hand, has a 10-year track record and a mature product, he added.

Chill out.

Platform	Linux
Processor	Pentium
Memory	16 MB
Processor speed	133 MHz
Processor type	Pentium Pro
Processor-based	PC server

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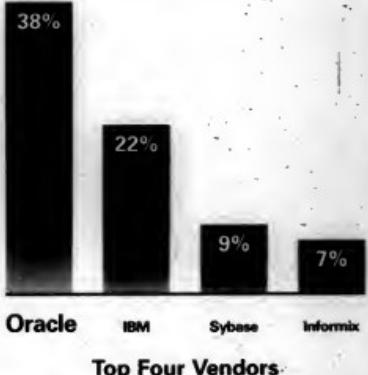
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NEWS

Visual search tools help dig out embedded web graphics

By Justin Hibbard

AS CORPORATE INTRANETS grow, so does the need to manage thousands of digital images embedded in web pages. To that end, vendors such as Encelair Technologies, Inc. are introducing visual search tools.

But users say the products don't always match the accuracy of test-based search engines.

Encelair this month announced the availability of Visual RetrievalWare, one of the first commercial software systems to automatically index and retrieve images based on patterns in the images' binary code.

The product is sold as a complete software developer's kit with tools for extending visual searches to several types of data,

including video.

Jeff Scherb, senior vice president and chief technology officer at Tribune Media Co. in Chicago, evaluated Visual RetrievalWare and several similar tools for his company's intranet.

WORK NEEDED

"These tools are great for standard photo libraries," Scherb said. "But we need to find a way to be much more specific than these tools currently can be."

Scherb said the visual search tools can match colors and shapes accurately but can't always find images based on abstract criteria.

For example, a visual search engine could match a photo of a space capsule to several other

photos of space capsules but couldn't distinguish between Apollo 11 and Apollo 13, he said.

In terms of accuracy, visual search tools don't beat tools that give you all kinds of keyword searching and searching techniques, Scherb said. A tool that combines tree searching for specific subjects and visual searching for colors and shapes would best serve Tribune Media's needs, he said.

That's just the type of tool PhotoDisc, Inc. developed to let customers

search for stock photographs on its Web-based storefront. The Seattle-based company combined Virage, Inc.'s VIR Image Engine with a keyword search engine.

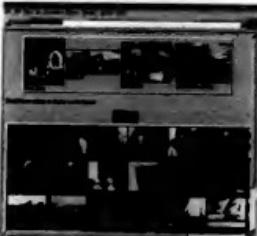
Bill Heston, vice president of business development at PhotoDisc, said his customers tend to search by context rather than visual criteria. That is why the

company decided a typical search with a visual search, Tag, each photo with up to 15 different keywords is an "arduous process," he said. But the staff uses Virage's visual search tool to automatically sort images into categories, he said.

VISUAL IMPORTANCE

As visual search engines begin to produce better results and become easier to use, companies that don't ordinarily use visual materials will discover the advantages of doing so, according to Carl Pappalardo, a consultant at Delphi Consulting Group, Inc. in Boston.

"Organizations that typically don't think in terms of photos and videos will realize that there are benefits to that information if they can control it," he said.



Encelair's Visual RetrievalWare can index and retrieve images, based on binary code patterns

Zitel modeling tool helps analyze performance of client/server nets

► Goal is to help users avoid costly upgrades

By Patrick Drayden

THIS WEEK AN old hand at mainframe capacity planning will launch two tools that analyze the performance of client/server networks.

"Upgrades have always been the easy way out in the open systems market, but they can be costly and miss the problem."

- Paul Mason, IBC

Zitel Corp. in Fremont, Calif., seeks to help designers and administrators build models for their Unix systems and internally working devices. Then, through experimentation, they can test new configurations, find bottlenecks and project the impact of growth.

"We could figure out when a proposed network might fail due to increased traffic from new users and changes in application usage," said beta tester David Keighley, vice president of engineering at CeKA Technol-

ogies, Inc., an integrator in Vienna, Va.

Keighley used Zitel's NetArchitect, which models network workloads through routers, switches, hubs and other points, to validate the design of a seven-site frame relay network.

"The customer was comfortable with our work when they could see that the network could support 30% more traffic yet still maintain the desired client-to-server response time," Keighley said.

Zitel's other new product, Capacity Planner, models components such as storage and I/O subsystems and processors to analyze system performance. Such tools from Zitel and other established vendors can predict costly upgrades that may not fit the root cause of server-level problems in complex environments, said Paul Mason, an analyst at International Data Corp. (IDC) in Framingham, Mass.

"Users could quickly save the cost of these products by model-

ing to understand performance instead of immediately upgrading many seemingly inexpensive pieces," Mason said.

Such tools are available from vendors including BGS Systems, Inc., of Waltham, Mass., Netsys Technologies, Inc., in Palo Alto, Calif., and SES, Inc., in Austin, Texas.

Zitel tried to reduce complexity and improve accuracy by simulating end-to-end workloads, not just generally analyzing traffic, according to company officials. And users need only a Windows PC to run its tools instead of a Unix workstation.

Zitel offers substantial databases that describe the performance of actual systems and internal network devices, Mason said, "but mapping out the network may be difficult."

Getting started requires some time and "someone who's network-savvy and has analytical skills," Keighley said.

NetArchitect costs \$6,995; Capacity Planner costs \$10,000, plus \$3,000 for data collectors that monitor up to 10 servers.

On Technology offers tool to control networked apps on NetWare, NT, Page 63

PowerPC moves to plan Be

By Lisa Picardie

POWERPC OWNERS will get Be, Inc.'s much-hyped BeOS operating system delivered to them regardless of Apple Computer, Inc.'s plans for BeOS.

Be, a Menlo Park, Calif., startup headed by former Apple chief technology officer Jean-Louis Gassée, last week licensed its object-oriented, multiprocessing, multitasking, memory-mapped operating system to Macintosh clone maker Power Computing Corp.

JOINTING TOGETHER

Power Computing in Round Rock, Texas, plans to ship all its systems with the Mac OS and the BeOS, starting at the beginning of next year.

"We would seriously consider a move to the BeOS if there were tangible benefits like increased performance," said Steve Luciani, general manager of *NY Times on the Web*, a publication of New York Times Electronic Media Co. in New York.

Be officials said they are also talking with other PowerPC vendors about potential licensing agreements. Power Computing's deal with Be is exclusive until April 1997.

According to sources close to the company, Be last week had

initial licensing discussions with Motsos, Inc. Be is also talking to IBM about a licensing deal.

In addition, sources close to Be said the company is readying an optimized release of the Be-OS to run on Intel Corp.'s Pentium Pro. That release is due out by mid-1997.

Although the Be-OS has been well-received by industry watchers and developers, observers said the biggest hurdle is incompatibility with current Macintosh applications.

However, at least four developers are working on software emulators to enable Macintosh applications to run on Be-OS, according to sources familiar with the third-party development.

Meanwhile, developers have to rewrite their software to run on the BeOS. Adobe Systems, Inc. and MacroMedia, Inc. are expected to be among the first to deliver BeOS versions of their applications, sources close to both companies said.

Be officials claim there are more than 3,600 developers in its developer program, and they expect the first wave of BeOS software to ship early next year.

Apple brings Macintosh multimedia software to Windows. Page 56



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Network costs may dilute network computer savings

CONTINUED FROM PAGE 1

of LAN backbone products at Bay Networks, Inc. in Santa Clara, Calif. agreed.

"The increase in bandwidth required by [network computers] will be pretty dramatic. WAN charges alone could negate any savings realized by buying [network computers] over PCs," he said.

Users will need network upgrades — from hubs and routers to LAN switches — to assure proper performance for network computer users, Newman cautions.

The increase in traffic will depend on which applications network computer users access.

SERVICE SIDE

Server vendors are making similar claims, saying their machines will need to be beefed up and clustered to gain high performance and reliability to users who will be stranded without server and network connections.

For example, Digital Equipment Corp. is telling customers that if they generally allot 500M bytes to 1G bytes of memory per PC, they can expect to cut memory allotments by 40% on a net-

NETWORK COMPUTERS REQUIRE

I LAN switching to the desktop

Upgrades to local servers

I LAN switching to data center servers

I WAN access equipment

I Higher-speed WAN lines

I WAN analysis tools

I Staff training

I Service and support

30% if remote will become three of the parts.

Another change means traffic from network computers will have to travel longer distances to reach servers, be they on the other end of a campus network or a far-flung intranet site.

That means upgrading to switching all along the path from the desktop to the data center.

Users will need LAN switching at speeds of 10M bit/sec., 100M bit/sec. and even beyond to bulk up their campus LANs for network computers.

Getting the same size pipes on the WAN side will be tough — and expensive.

"LAN bandwidth is cheaper than WAN bandwidth," Newman said. "So unless you stop the [network computing] model at the campus boundaries, you can expect dramatically higher WAN charges." That is because the WAN is the bandwidth bottleneck.

ETHERNET COSTS

Users with local servers will need Ethernet switches to provide dedicated bandwidth to each network computer and a fast pipe to the server.

Information systems managers can expect to pay about \$1,975 for a 12-port Ethernet switch and \$4,975 for a 24-port unit.

Those prices, from 3Com Corp., are the lowest list prices of the big four — 3Com, Bay Networks, Cabletron and Cisco.

And although PC users are generally allotted about 8MB to 1G bytes of memory per PC, IS managers can cut that by 40% when they figure out how much memory to add to a network computer support server, Briggs said, because users wouldn't be using those spaces at the users' sites.

Remember, there are less on a network computer-based server than in a stand-alone PC client/server arrangement, where users draw from their local hard drive and the applications sit on a server [see story, page 63].

And Digital estimates that in a PC environment, about 3,000 users who run applications such as Notes or Microsoft Corp.'s Exchange can be served by its Z35000 Intel Corp.-based server, which has dual Pentium Pro processors.

That user server could support only about 1,000 users who run the same applications on the users' server in a network computer environment. That is because the server takes care of all computation and memory requirements for users.

The price of a Z35000 starts at \$7,500 but can rise to hundreds of thousands of dollars when the number of users increases. Briggs said adding more than 30 to 100 network computer users requires more processing power and memory on the server.

— April Jacobs and Bob Wallace

Network computers may increase network storage needs, server power. Page 43

Software gives NT Server wide-area routing option

CONTINUED FROM PAGE 1

packages for Windows NT. And Microsoft some years back jointly developed a software-based router with Wellfleet Communications Inc. — now part of Bay Networks Inc.

But those products lack many of the features of the forthcoming Steel Head, which Microsoft is developing on its own, said Ron Milione, chief of technology at Sysco, Inc., a systems integrator in New York.

"Steel Head is much more comprehensive. And although stand-alone routers from Cisco, Bay Networks and 3Com can do many of the same things, they add another layer of complexity to the network. What many users want is one-stop shopping," Milione said.

WIDE-AREA SUPPORT

Eric Hindin, an analyst at The Yankee Group in Boston, said Microsoft's decision to supply LAN and WAN routing functionality on Windows NT 4.0 means the company will "be able to provide customers with a complete operating system and routing solution."

"It's a very appealing concept," said Wayne Stein, project manager at Electronic Data Systems Corp.'s General Motors Access program in Detroit.

"Instead of having multiple hardware routers, we could just use the software package to lessen the complexity of our infrastructure and network management tasks. That would be a big help in a network as big and geographically dispersed as ours," Stein said.

Users and analysts said it makes sense for Microsoft to add WAN routing capabilities to the NT Server environment because the Redmond, Wash., company is increasingly positioning NT Server as a higher-end enterprise operating system.

GOOD REVIEWS

"It looks great," said Milione, who has been testing an alpha version of Steel Head for three weeks.

"Microsoft has designed Steel Head to be compatible with all of the major industry-standard routing protocols and routers. And that will make all the difference to users," he said.

Specifically, Steel Head is

MICROSOFT'S STEEL HEAD WAN

I Supports 10/100M bit/sec. switched Ethernet and Token Ring

I Supports switched ATM connections on ATM, FDDI, ISDN frame relay and X.25 networks

I Demands dial-in routing for connection to branch offices

I Supports industry standard routing protocols

I Has built-in SNMP network management

I Has a graphical user interface for remote monitoring and configuration

compatible with any hardware-based Simple Network Management Protocol module.

Steel Head also will send data transmissions via TCP/IP and Novell, Inc. IPX networks.

An information systems manager at a large financial institution in the Northeast said Steel Head could definitely have a place, but his company wouldn't just toss out its routers, which cost more than \$100,000.

"For starters, it means I wouldn't have to buy additional stand-alone PCs," said the IS manager, who requested anonymity.

Another obvious advantage is the ease of administration. "I'll be able to manage Steel Head as part of the Windows NT Server domain, with the ability to set up event alerts and alarms similar to other NT events," the manager said.

Microsoft will initially pack; Steel Head as an add-on expansion for Windows NT Server.

It is slated for general availability in next year's second quarter. Pricing hasn't been set, Milione said.



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Notebook nightmare

» Just when you thought it was safe to buy a laptop, you can't get one.

By Mindy Blodgett

USERS ENTERING their end-of-year buying cycle will find that laptop vendors still haven't erased the pesky notebook computer shortage. And it is a problem that won't go away soon, according to industry observers.

"Our users are not pleased when they have to wait, but we don't seem to have a choice," said Asmar Madyun, technical support manager at the network services division of AT&T Corp. in Berkeley, Calif.

WAITING GAME

The shortages run across the industry. The wait for notebooks from Compaq Computer Corp. and Toshiba America Information Systems, Inc., typically ranges from six to eight weeks. Likewise, those who use the IBM 760 and the high-end IBM 760 model face waits of six to eight weeks.

Current lead times for some of Digital Equipment Corp.'s high-end, Hi-Note Ultra notebooks are in excess of two months. Compaq officials say orders for some models, such as the Armada 4100, are backlogged into next year.

Demand is likely to remain high, despite a new survey from H&M Consulting in Sunnyvale, Calif., which tracks high satisfaction levels across 3,000 laptop computer users in the U.S. and Europe.

Users are pushing faster modems and advances such as video. But users want simple features, such as long-running battery life and easy configurations, according to Mark Maggill, an analyst at H&M Consulting.

According to International Data Corp. in Framingham, Mass., the number of portable sold in the U.S. will rise next year by 34%, to 4.8 million machines.

This figure assumes there are

products to ship.

One theory behind the undersupply of laptops is that vendors underestimated the demand, as they have for at least a year.

The new twist — which is being denied by laptop executives — is that in a bid to avoid being stuck with older models, vendors have limited production of the newer models, industry sources said.

Some industry watchers blame Intel Corp., the maker of the Pentium processor used in market-leading laptops, for pushing the vendors to support faster and faster chips.

That forces laptop makers to ramp up production in continuous cycles before they can adequately assess the market.

SUPPLY AND DEMAND

Laptop vendors said the reason for the continuing problem of getting notebooks into the hands of desperate users is simple: runaway, unprecedented demand. They had a year to get it

"Our users are not pleased when they have to wait, but we don't seem to have a choice."

Asmar Madyun,
AT&T Corp.

right, but laptop makers interviewed last week insisted they couldn't forecast the huge demand that has been thrust upon them.

Ken Dulaney, an analyst at Gartner Group, Inc. in San Jose, Calif., said his company has been telling corporate users for more than a year to have at least two notebook distributors on board to handle the shortages.

And some users said it helps to have a really good relationship with a distributor.

Josephine M. Wit, field service manager of information systems at Bayer Corp. in West Haven, Conn., said her company has been able to get ThinkPad 760EDs "even though we know they are in very tight supply... We have a great relationship with the distributor."

Planes, laptops collide

CONTINUED FROM PAGE 1

spreadsheets and create memos on their laptop computers. Airlines welcome the in-flight workers and are even developing ways to make their lives easier.

But the needs of power laptop users and the desire of airlines

to attract business travelers are colliding with the fears of electronics experts, who claim that portable electronic devices might interfere with flight controls and threaten passenger safety.

Portable devices include lap-

tops, handheld PCs, cellular telephones, pagers and transistor radios.

The experts are split on how best to resolve the issue. Some merely want to make mandatory what is now a voluntary policy — asking laptop users to shut down their machines during takeoff and landing.

For example, in a recent report to the Federal Aviation Administration, Radio Technical Commission for Aeronautics, Inc. (RTCA), a nonprofit aviation organization, proposed an outright ban on the use of portable electronic devices during critical times such as liftoff and landing.

But some electronics experts have gone so far as to call for bans for the duration of flights. Others have urged airlines to issue guidelines for "approved" devices with adequate shielding that prevents radiation from escaping.

"I would certainly complain if I was unable to use my laptop at all," said Tim Cooper, director of information systems at DuCharme and McMillen Associates, Inc., a tax consultancy in Fort Wayne, Ind. "I get a lot of work done on flights."

The portable devices emit ra-

EVIDENCE IS MOUNTING

Pilots since 1981 have reported 157 incidents in which flight controls might have been affected by portable electronic devices, including laptops, according to the RTCA.

Those incidents include cases in which flight controls, such as directional gyro devices, abruptly stopped working or gave inaccurate readings.

The anecdotal record shows that the problems usually ended when users were told to turn off their devices.

While never proved, there have been enough cases to worry aviation officials.

Also at issue are new devices such as two-way pagers, personal satellite communicators and computers with built-in cellular phones.

The RTCA recommends a total ban on such devices that send out signals to base stations, a situation even more potentially dangerous than laptop "noise" on flight controls.



Study finds bank Web sites unreliable

A few online sites shine, but many are slow or faulty

By Thomas Hoffman

NEARLY A QUARTER of the visits to 500 Internet banking sites in a recent study failed because of sluggish response, downed servers, missing links or faulty site design.

The study revealed that many banks had extremely unreliable Internet sites, said M. Victor Janulaitis, CEO of Positive Support Services Inc., a consultancy in Santa Monica, Calif., that prepared the study.

Some bank sites "have the sound of the ocean and other wonderful features, but they aren't designed for home banking," Janulaitis said.

The "Banking Industry Internet Response Time Study" focused on 500 U.S. and international banks that have a presence on the World Wide Web.

TICK, TICK, TICK

Here is the breakdown of how many seconds it took to reach banking industry Web sites out of 2,202 hits:

Seconds	Percent of Sites
Less than 5	3.65%
6 to 10	8.21%
11 to 20	17.81%
21 to 30	19.39%
31 to 40	16.42%
41 to 50	11.41%
51 to 60	5.93%
61 to 70	4.1%
71 to 80	2.97%

Source: Positive Support Services, Inc., Santa Monica, Calif.

Using Microsoft Corp. Windows NT 4.0 desktop machines equipped with 14.4K and 28.8K bit/sec. modems, researchers visited each site at least 10 times last month at different times of the day and night.

Some of the least reliable sites were piggy-backed on the servers of Internet service providers that also serve a host of other clients. This created poor performance, the study said.

Certain causes of slow response rates, such as Internet traffic jams at peak hours, are outside of banks' control. But many design problems can easily be fixed.

Bandwidth-hogging graphics — such as the 73K bytes of images on the Wells Fargo Bank home page, including the famous stagecoach — can be an abhorrence for Internet banking customers who don't want to wait to download high-resolution images, Janulaitis said.

"The general rule of thumb is to keep all images under 50K [bytes]," said Ted Rasch, a principal at The Solution Zone, a Web site developer in Westbury, N.Y. Anything larger will result in load lag

time, leading Internet surfers to "move on to another site," Rasch said.

The good news is that the home pages of more than 30 Internet banking sites were downloaded in an average of 20 sec-

onds or less with no errors.

One of the biggest mistakes banks and other Web-based organizations make is failing to beta test their sites before rolling them out to the public.

Union Bank in San Francisco is setting up its own Internet servers with T1 links

to the net. The bank plans a beta test with as many as 50 customers before it goes live by the second quarter next year, said Frank Han, vice president of interactive markets at the \$3 billion bank.

First Union Corp. in Charlotte, N.C., is developing a system to detect if a Web visitor is using a 14.4K bit/sec. modem so the bank can reduce the number of images to be downloaded, said senior webmaster Duane Pinigkeit.

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3Com router offers users versatility

► *OfficeConnect NetBuilder targets small offices*

By Bob Wallace

JCOM CORP. in Santa Clara, Calif., this month will ship a versatile and feature-rich router that gives small offices all the

sophistication and advanced features of expensive central-site systems — without the sticker shock.

OfficeConnect NetBuilder can route everything from Internet Protocol to IBM

legacy protocols. It can use all major wide-area network services, including frame relay. It can conserve WAN bandwidth and can do double duty as a security firewall.

The router was designed to fit in a space-conserving stack of networking

products called OfficeConnect. The stack can include hubs, LAN switches, fax servers and peripherals used in remote offices and small businesses.

Pricing for the device starts at \$1,495. The same functionality in a central-site 3Com router costs roughly \$8,500.

OfficeConnect NetBuilder comes with an Ethernet LAN port, a serial WAN port and either an Integrated Services Digital Network (ISDN) Basic Rate Interface port or a digital data service port.

BIG BOX, SMALL PRICE

"It's remarkable that 3Com can shoehorn all the functionality of much larger routers into a small-office [box] at such a low price," said Kevin Adams, technical specialist and communications architect at Compumware Corp. in Farmington Hills, Mich.

"We give WAN flexibility and firewall capabilities in a router we can use at small offices, executive offices and homes of our developers," he said.

SMALL-OFFICE ROUTER REVENUE

Q1 1996	\$76.3M
Q2 1996	\$84.3M
Q3 1996	\$98.4M
Q4 1996	\$112.3M*
Q1 1997	\$111.1M*
Q2 1997	\$152.4M**

*Projected
**Source: The Data Group, Menlo Park, Calif.

Like their central site brethren, OfficeConnect routers ship with software that supports IP, IBM's SNA and Novell, Inc.'s IPX routing or a complete package that includes IP, IPX, Apple Computer, Inc.'s AppleTalk, IBM and legacy protocols.

Legacy protocol support is important for users who need to link sites that have old IBM equipment, point-of-sale machines and automated teller machines to their corporate data networks.

AND THERE'S MORE

Other key OfficeConnect NetBuilder features include the following:

- **Broad WAN support.** The router can use ISDN, frame-relay, private-line, X.25 and dedicated multimegabit data service links. Users benefit by being able to choose the least expensive service on a per-site basis.

- **IP firewall capabilities.** The router lets information systems managers set filters that determine who can gain access to, and leave, corporate data networks. It has been certified by the National Computer Security Association.

- **Address device integration.** OfficeConnect NetBuilder comes with a built-in network access device that can save users a few hundred dollars per box and simplifies network administration by eliminating the stand-alone unit.



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By a WALL STREET JOURNAL Staff Reporter
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computer-storage product, the Symme-
trix 3500, with a powerful, new server
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NEWS

PeopleSoft takes aim at global manufacturing

By Randy Weston

SAN DIEGO

USERS WILL GET their first look at Version 6 of PeopleSoft, Inc.'s software this week at the company's annual user conference.

Although the Pleasanton, Calif., company lags behind competitors in the race to the Internet, analysts said Version 6 positions PeopleSoft to take on the manufacturing industry and global markets.

"These are very big hills PeopleSoft is trying to climb all at once," said Bobby

Cameron, a packaged applications analyst at Forrester Research, Inc. in Cambridge, Mass. "Manufacturing is not like human resources and financials at all. It is a much more conservative market and more dollar-sensitive."

Still, Cameron said, PeopleSoft already

Ways and means

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has successfully made one big shift — from human resources to accounting. Besides adding an integrated manufacturing component to its offerings, PeopleSoft re-engineered its architecture to attract international customers. The architecture integrates foreign language interfaces and country-specific application regulations into the core product.

PeopleSoft Version 6

- Give users new applications for finance, supply-chain, manufacturing and human resources
- Has multilingual capability and other functions for global companies
- Includes vertical market applications for governments, colleges and universities
- Supports 32-bit architecture

That is good news for America Commercial Barge Line, Inc., which recently expanded into Venezuela and Argentina. The Jeffersonville, Ind., company has installed a beta version of PeopleSoft for manufacturing, along with the human resources and financial components.

GOOD DIRECTION

Geoff Fuller, vice president of technology at the \$700 million shipping company, said PeopleSoft's new direction is the reason his company chose the products.

"We have a production line that is 7,000 miles long, and our fleet is in excess of 100 boats," Fuller said. He added that PeopleSoft's global focus is in line with his company's growth into multinational markets.

But PeopleSoft has a lot of ground to cover to catch up in the market and may have built itself with its late entrance. Even some of its loyal customers aren't willing to make the jump to its manufacturing products.

Supply-chain company McDonnell Douglas Corp. in St. Louis installed PeopleSoft human relations and financial applications but couldn't wait for a manufacturing component to be released.

"Going after manufacturing was something PeopleSoft needed to do to stay competitive, but it missed the boat with us," said Steve Nernush, McDonnell Douglas' program manager for integrated financial management systems.

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COMPAQ

Has It Changed Your Life Yet?

Telecom managers dial up temps

User demands, shrinking staff cause crunch

By Kim Girard

TELCOMMUNICATIONS managers whose jobs once entailed little more than ordering services from the telephone company are scrambling to find employees with the skills to handle the job's increasing complexity.

In this environment, many companies are recruiting temporary workers, outsourcing or training more staff members in telecommunications basics.

"Most telecom departments are lean and overworked," said Patricia Tilley, an administrative analyst at the University of California's telecommunications department in Oakland.

The workload problem can be attributed, in part, to increasing corporate demands for a more flexible phone system.

"A person who used to want a phone now wants voice mail, and they want their voice mail to call their pager, and they want a cellular," Tilley said. "Ultimately, they want a PC with [E-mail], and ultimately, they want [the phone and the PC] to come together."

Those new services require knowledge of product interoperability, new protocols, networking and computer telephony standards. For many companies, the changes have brought increased sharing of computer and telephone knowledge and a pooling of resources.

"I think it's critical to have those close sides, especially because some of the voice systems are using [LAN] protocols now and PC based operating systems for voice," said Dave Vande

Voort, manager of corporate technology at CUWA Credit Union in Madison, Wis. Vande Voort is in charge of telecommunications but works closely with the company's data communications manager. "We're learning some of this together."

Funding temporary employees who possess skills that complement the system a company uses can be difficult, said Dawn Kaminski, manager of telecommunications at Ipsilon, a Burlington, Mass.-based subsidiary of American Express.

Because it is hard to convince management to hire full-time workers, Kaminski recently con-

tracted a temporary high-level analyst to do a network switch and routing analysis.

In the past, she has hired technicians for projects, such as installing phones or moving systems from floor to floor.

It is key to hire employees with LAN and WAN skills work together, she said.

"We're not getting more bodies," she said. "I provide solutions for the wide area and the Internet. The LAN guys do routers and firewalls. You merge and share your skills."

"Finding the right skills in telecom is hard," said Tony Wright, program coordinator for the Massachusetts Telecommunications Council. Many human resources departments are struggling to hire people to fill

telecommunications jobs. One problem, he said, is that many applicants lack the ideal candidate's qualifications, including an engineering degree, networking background and knowledge of wireless and online technologies.

Temporary telecommunications workers earn, on average, \$12 to \$15 per hour and can make \$40,000 per year with continuous work, said Joan Rodenberg, president of Telecom Internat Staffing Corp. in New York.

MANAGEMENT CAUTIOUS

Rodenberg said studies that show downshifting hasn't boosted profits have made management more reluctant to lay off telecommunications managers.

Instead, the trend is to hire low to midlevel employees as temporary or outsource telecommunications management through a program such as AT&T Corp.'s Solutions. Rodenberg said.

3Com rolls out hub for low-cost port switching

By Barb Cole

3COM CORP. last week announced a managed Ethernet hub with advanced features for users who haven't moved to LAN switching.

The SuperStack II Port Switch Hub 10 costs \$55 per port for the 24-port model. The product can be managed using Simple Network Management Protocol (SNMP) systems, has full remote management support, INTERNETEX virtual LAN features and a free PC-based configuration package.

"That's a lot of functionality in an intermediate box, which we could probably find a home for," said Alan Robson, director of network systems at coupon company Val Pak Distributing, Inc., in Largo, Fla.

"But we prefer hubs that support more than one Ethernet segment so we can switch users between groups," he added.

EASY SWITCH

Users who need greater functionality can use the Port Switch Hub 10 with a current hub to easily switch users among any of four Ethernet LAN segments, without additional spending on Ethernet switches.

As Robson pointed out, that can be done with an existing

3Com hub rather than missing the new one with older ones.

Port switching is a step between using regular LANs and LAN switches.

The Port Switch Hub 10 are available with either 12 or 24 ports and can be stacked 10-high to support more than 260 managed ports. Stackables are popular because they require little room and can be administered and managed as a single unit.

The new 3Com hubs support all nine Remote Monitoring (Rmon) groups for a LAN segment. Rmon lets network administrators check hub performance, spot potential problems and troubleshoot.

The Port Switch Hub 10 can be managed from any SNMP-compliant network management system, such as Compaq SmartAgent software. It offers remote polling of the device and security capabilities.

And although the functional- 3Com's Internet enhancements are not widely deployed, the new hub supports virtual LANs — logical networks comprising users on different physical networks.

Hewlett Packard Co. offers a similar scheme.

The Port Switch Hub 10 is available in a 12-port unit for \$749 and a 24-port unit for \$1,339.

INTERNET SUPPORT

Exchange 4.5 falls short for large users

By Barb Cole

Exchange 4.5

What it has

- Support for several Internet protocols
- Ability to access Exchange post office from a Web browser
- A Lotus CC-Mail connector

What it doesn't have

- Server storage beyond the current 16G-byte limit
- Improved support for SMP machines and Windows NT clustering
- More flexibility in managing distributed servers

Scott, information systems manager at Oregon State University's College of Business in Corvallis, who supports about 4,500 students on Exchange.

Until now, Exchange left students with older computers out in the cold because it was optimized for Windows NT, Scott said.

"Now, we don't even have to have Exchange running on the client," he said.

But beyond getting more mileage out of old hardware and improving more handy World Wide Web access to mail, users found little else to like about Exchange. There is a Lotus CC-Mail connector and the ability to segment large company directories.

But Exchange 4.5 is seen as an interim product, said a beta tester who requested anonymity. "Aside from the client choice and Internet stuff, very little has changed with 4.5," he said.

Microsoft officials conceded that there aren't a lot of server-side enhancements in 4.5. But the company plans a release for the middle of next year that officials said will address some of the concerns of big companies rolling out large Exchange deployments.

SERVER BOOST

Specifically, the release will boost the current 16G-byte limit on server storage to 16T bytes and improve Exchange's ability to support symmetric multiprocessing hardware and Windows NT clustering.

"We would have liked to see some of these things sooner, but that's what Microsoft had to do to address the Internet issues to keep pace with its competitors," said Kirk Reeves, systems engineer at the Kentucky Department of Education, which has moved about 1,500 users to Exchange.



Dave Vande Voort
Corporate demands for flexibility push departments to pool resources

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cc: Marie Ammoral, Michael Vitali
bcc:
Subject: Upcoming Sales Conference

Joseph.
Here are the latest figures for the conference in Cambridge the week of the 14th.

Please fill in your numbers for Q4.

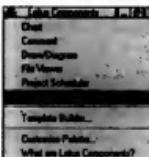
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\$32,400	\$33,654	\$34,999	\$39,365

Let's get this wrapped up in the next couple of days. Thanks in advance.

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Computer Industry

Baan purchases Antalys for configuration software

By Randy Westman

THE BAAN CO. last week added configuration software to its portfolio by acquiring Antalys, Inc.

While other enterprise-wide software vendors have deals with **MANUFACTURING SOFTWARE**

Analys said the move is in line with Baan's traditional concentration on manufacturing markets.

Details of the acquisition of the privately held Antalys hadn't been released at press time.

Analys is based in Golden, Colo. The vendor's main product is Classsys, which sets config-

uration and pricing for manufacturing of complex products, such as electronics.

Classsys is used to help reduce lead times and allows sales people to give more accurate delivery information to customers at the time of purchase.

"You need good configuration software in front of your manufacturing module to make sure that what you are putting together is valid," said David Fagerstrom, a manufacturing industry analyst at Plant-Wide Research Group in Billerica, Mass.

Fagerstrom said the technology is needed so "when a customer places an order, you can configure your manufacturing software to the order to make

sure you've got the right pieces with the right parts."

Fagerstrom said the software lets a customer configure an order with a customer in one shop or the order directly to the factory floor. By doing so, the customer can make sure the order is correct when it is sent. A salesperson also will be alerted when the order is placed if a customer's request can't be fulfilled.

Baan's move to embed the technology in its core Baan IV product is further evidence that the Dutch company is trying to strengthen its market position by going after new niches in its core manufacturing industry.

"The addition of Antalys extends Baan's reach to areas where it had a perceived weakness," Fagerstrom said. "For many existing Baan customers, it will probably be, 'Yeah, so.' But for entering new markets, it is a significant step."

This is the second purchase for Baan this year. The company in June bought Berclain Group, Inc., a Canadian company that specializes in supply-chain management software.

With Antalys, Baan gains future access to some key new customers. Among the companies that use Antalys products are General Electric Co., Westinghouse Electric Corp., Gateway 2000, Inc., and heating and air conditioning systems maker Lennox Industries, Inc.

Matt Giordano, manager of applications packages at Gateway 2000, said Antalys' technology is mandatory for his company's type of custom-order business.

Tom Gherardi said the North Shore City, S.D., company won't drop off J. D. Edwards & Co. suite of applications and replace it with Baan products any soon.

BAAN ACQUISITIONS SINCE 1993

Date	Company Acquired	Product Acquired
1993	Probe Software Sciences, Ltd.	Process industry applications*
1996	Berclain Group, Inc.	Supply management and planning
1996	Antalys, Inc.	Order-configuration software

*Not listed in previous year table, but listed here separately.

Briefs

CHANGES At Apple Computer, Inc., Steve Jobs has returned as chairman and CEO. Steve Jobs' return follows the departure of Michael Spindt, who had been chairman and CEO since 1993. Steve Jobs had previously been chairman and CEO of Next Computer, Inc., before he was ousted by Steve Jobs. Steve Jobs had founded NeXT, Inc., in 1985, and had been chairman and CEO until 1993, when he was ousted by Steve Jobs. Steve Jobs had previously been chairman and CEO of NeXT, Inc., before he was ousted by Steve Jobs.

A NEW CHALLENGE

Yocam admits he will have his plate full at Borland, which is known for high-end development tools such as Delphi and InterBase.

"The company was not making the transition to new markets fast enough. Client/server, the Internet and the intranet are

By Sharon Gaudin

SCOTTSDALE, CALIF.

THE NEW CEO at Borland International, Inc. hopes to lead the beleaguered company out of rough financial waters by riding the Internet wave.

Delbert W. Yocam, 52, was appointed to the position last week. Gary Wesel stepped down as CEO in July after the company's dismal second-quarter numbers were released.

Yocam was executive vice president and chief operating officer at Apple Computer, Inc., from 1986 to 1989. He led Apple in its heyday, when the company increased its annual revenue from \$1.9 billion to more than \$4 billion in three years.

A NEW CHALLENGE

Yocam admits he will have his plate full at Borland, which is known for high-end development tools such as Delphi and InterBase.

"The company was not making the transition to new markets fast enough. Client/server, the Internet and the intranet are

the markets that are moving," Yocam said. "Borland made the right decisions. I just don't think they happened early enough."

Yocam said one of the company's problems lies in the difference between expenses and revenue. He said bringing those lines together will be one of the

"I made a lot of money at Apple, and I'm a pretty independent character. I can choose work where there's excitement, and I can get my juices flowing." — Borland's Delbert Yocam

first things he tackles when he starts work today. One option in doing that is layoffs, though Yocam said nothing is a sure bet at this point.

Yocam takes Borland's helm two months after 15% of its employees were laid off and right after the company reported a \$9.8 million loss for its third quarter.

"I made a lot of money at Apple, and I'm a pretty independent character," Yocam said. "I can choose work where there's excitement, and I can get my juices flowing. I wouldn't be joining if I didn't think there was the technology to get me excited."

Yocam will oversee the launch of three new products in the next six months: an updated version of Delphi for client/server, a new version of Borland C++ and Open JBuilder, a visual Java tool.

"Yocam clearly is what Borland needs," said Ezra Gottheil, an analyst at Hurwitz Group, Inc. in Newton, Mass. "Borland often has the world's greatest technology. There's a very developer-centric culture there, and they make good products. They need a way to turn their technology into a viable business. ... They need someone who can manage costs and marketing

and make appropriate partnerships."

Chris Kwieciński, senior systems developer at Nabisco, Inc. in Parsippany, N.J., said Borland needs to focus on making its products easier to use.

"I kind of like Delphi, but if they want to get into the corporate world, they need to make it easier," Kwieciński said. He said he hasn't even bothered to look at the latest version of Delphi, even though he has used Borland products for the past 10 to 12 years.

Gottheil noted that Yocam was at Apple when the firm was making computing easier. "That was the period when the Macintosh was clearly a real computer and a heck of a lot easier to use than an Intel Corp.-based or DOS-based computer," he said.

After he left Apple, Yocam served on the boards of eight companies, including Adobe Systems, Inc. and Oracle Corp. He still holds those two posts and three others. From 1993 to 1994, he was the CEO at Tektronix, Inc., a hardware company in Wilsonville, Ore.

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Please complete the questions below.

1. INDUSTRY/SECTOR (Circle one)

- 10 Manufacture (other than computer)
- 20 Financial/Insurance/Real Estate
- 30 Manufacturing/Trade
- 40 Wholesale/Trade
- 50 Business Services (SP)
- 60 Government - State/Federal/Local
- 70 Communications Systems/Public Utilities/Transportation
- 75 Mining/Construction/Power/Utilities
- 80 Manufacturing of Computers, Computer-Related Systems or Peripherals
- 85 Systems Integrators, VARs, Computer Software/Business Planning & Consulting Services

80 Computer/Peripheral Dealer/Distributor

85 Other _____ (Please specify) _____

2. TYPING/POSITION (Circle one)

- 15 Chief Information Officer/VP/CSO/COO/President
- 21 Dr/Mgr MIS Services, Information Management
- 22 Dr/Mgr Network Sys, Data/Telecom, LAN/Msp/PC/Netw. Tech Planning/Administrative Services
- 23 Dr/Mgr Sys Development, Systems Architecture

31 Programming, Management, Software Development

35 Emerging, Scientific, R&D, Tech Management

36 Bus/Hyper/Value/Strategic Consulting Mgt.

37 President, Owner/Partner, General Mgr.

38 Vice President, Ass't VP

39 Treasurer, Controller, Financial Officer

40 Sales & Mktg. Management

42 Medical, Legal, Accounting Mgt.

43 Information Resources, Management

44 Information, Computer, Electronics, Education, Journals, Libraries, Students

45 Other (Not Personnel)

3. Do you use, evaluate, specify, recommend, purchase, implement? Circle all that apply

Data Processing

41 Mainframe, Mini, PC, LAN, Workstation

42 DBMS

43 DBMS

44 DBMS

45 DBMS

46 Macintosh

47 Macintosh

48 Macintosh

49 Macintosh

4. Which of the following software products do you use, evaluate, specify, recommend or purchase? Check all that apply

Personal Productivity

51 1-2-3

52 Lotus

53 Microsoft Word

54 Microsoft Excel

55 Microsoft Access

56 Microsoft Project

57 Microsoft FrontPage

58 Microsoft WordPerfect

59 Microsoft PowerPoint

60 Microsoft Publisher

61 Microsoft Visio

62 Microsoft Project

63 Microsoft Word

64 Microsoft Access

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EDITORIAL

Life without gatekeepers We were so smug. We sat in offices in the Northeast back in the '80s,

and we just knew that big industry had blown it. It was its own fault. It was the Rust Belt. It hadn't kept up with the times, hadn't automated.

Fast forward to Comdex/Fall '96. Suddenly, I know how an Ohio factory manager, circa 1984, felt. Try as you might to embrace technology, you just see it swelling faster and faster. My industry — news — has recognized the World Wide Web. Every publication, from the West Waheo Weekly on up, has a Web site.



what is coming down the road is truly the dreaded "paradigm shift."

Less than a year after PointCast news feeds began to bog down corporate networks, a walk through the aisles at Comdex turned up product after product

designed as a news-delivery vehicle. A cool-looking pyramid that is actually a wireless receiver sits on your desk and alerts you when it spots a news item of interest to you. Server products let you build a personalized broadcast channel or push news feeds out to customers. Agent-style utilities scour the Web for the latest news and changes to your favorite Web sites. Don't have a PC? No problem — just tap in to Internet news feeds from a cellular phone. When I was born into the newspaper business, it was pretty basic — news printed on paper. But the technologies at Comdex signal the birth of an industry that isn't based on paper and isn't pure news. Information access may be so immediate that readers won't have time to ponder what's new, why it's important and whether it's marketing fluff.

With luck, we'll emerge from a few years of chaos into a world where news people — those charged with keeping things in perspective — remain as gatekeepers. Yet there's an irony in the intent at the Comdex gizmos. It seems that the first people in line to say, "Gee, I could use that," are the biggest news junkies of all: people like me, who then have to deal with the impact.

James M. Connolly
Technology evaluations editor
Internet: james_connolly@ca.com



LETTERS

A nit to pick

THIS HIT has been bothering me for a while. I'm not quite sure when you started using this terminology, but the grammatically incorrect handle "Tandem" finally convinced me to send in a letter.

Hardware platforms do not "run on" operating systems. Hardware platforms "support" operating systems. Hence you should say, "NT to run on Tandem," or "Tandem to support NT."

While I'm at it, operating systems do not "run on" database systems either. Operating systems support database systems.

Anne Thomas
Senior product architect
Open Environment Corp.
Boston

Database applications can be deployed on intranets

I JUST FINISHED reading a product review in your Oct. 14 issue ("IntraBuilder brings databases to Web") and found it quite disturbing. The review was well-written, but the first paragraph drew me for a loop. Author Garrett E. Ray indicated that deploying a database application, such as a telephone directory, on an intranet could take an army of programmers and network professionals. I disagree.

Since early last year, my company, Professional Web Authoring, has taken database-intensive applications such as directories and help desks and moved them to intranets. We have done this for a number of applications dealing with corporate support issues at one of the largest telecommunications companies in the South. We not only did it fast (eight weeks),

but we also did it with two programmers. The applications support up to 90,000 employees, have been used more than 3 million times since Jan. 1 and have never broken. We use Sybase System 12 as our back-end database and Netscape server and browser software as the client and front-end.

Kenneth Solomon
Professional Web Authoring, Inc.
Roswell, Ga.

Report gender offenders

THAT CANTILE's letter in Computerworld's Oct. 21 issue warns readers to beware of the manager who perceives a power advantage based on gender roles. What Cantile is describing is a "hostile work environment" and is the basis for discrimination/harassment lawsuits. As an employer, I am constantly harangued not to create a hostile work environment so I don't get sued for sexual harassment. No one should have to work in an environment where they feel harassed or intimidated, for whatever reasons.

I encourage Cantile, or anyone else, to report any hostile work environment to his state's Department of Fair Employment or the Federal Equal Employment Opportunity Commission.

M. Steven McClellan
Via president and CEO
AWF/Wayne Net Services
Redding, Calif.

New chip makes federal encryption policy moot

I HAVE BEEN WAITING for Computerworld to raise the issue of the federal government's anti-global-business political position against the distribution of greater than 40-

bit encryption key software without surrendering a key to the government. [Eds ease crypto rules, but with a 'key catch,' CW, Oct. 7.]

According to a June 8 article in The Economist, the whole issue of the fed's position of not allowing greater than 40-bit key encryption software for export is now totally without merit.

The article describes the encryption chips developed in Japan by NTT, the telephone giant, and a Japanese subsidiary of RSA Data Security, Inc., the American encryption company.

The chips can be used around the world and can even be imported into the U.S.

So it would seem that President Clinton, Vice President Gore, et al are beating yet another dead horse.

Computerworld should take the lead in demanding that the government get out of this already-lost fight and support business and individual rights and global trading opportunities instead.

Jim Bronson
Frankenmuth, Mich.
734-427-2791@compuserve.com

Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 917, 50 Old Connecticut Path, Framingham, Mass. 01702. Fax number: (508) 875-4851; e-mail: letters@comcen.com. Please include an address and phone number for verification.

Do you really understand your business?

Efrem G. Mallach

Motherhood. Apple pie. The flag. Understanding your employer's business. Who can argue with any of those? Trouble is, my idea of understanding the business isn't yours. How can we tell if you *really* understand it?

Here's a quiz for IS professionals to see if you know your company's business. Try to answer these questions:

1. What must your firm accomplish this year to be considered successful?
2. What external factors have affected a most strongly in the past two years?
3. What are its three most important product lines?
4. What are the annual sales of the top three product lines, in dollars (within 20%)? In general terms, how is this expected to change in two years?
5. When and approximately what is the next major change in each of the top three product lines?

Do you know the sales figures and market shares of your firm's top three product lines?

6. What is the major market for each of the top three lines? (Type of customer, geographic area and so on, as appropriate.)
7. What are your firm's market shares in these markets? How do these shares compare with those of the leader? Are your shares growing or shrinking?
8. Who are your firm's top two competitors in each of these markets? How do

your market shares compare with theirs? 9. What is your firm's strategy for each of its key lines? Does it stress low cost, high quality, range of options, or does it focus on a niche market, customer service or superior technology?

10. How does one of your competitors use IS in a way you don't? (This doesn't necessarily mean you should copy them.)

Now for the scoring. Give yourself one, two or three points for each question, depending on how well you answered it. (Most questions have three parts, to make scoring easy.)

This isn't meant to be a rigorous, statistically valid test; it's just a rough illustration guide to your knowledge. The maximum score is 10 points. If you score yourself

30 points: A+. Tell your president that his successor is ready. If you are the president, you passed.

25 to 29 points: A. You know what your company is about. If you're the president and you missed Question 10, read *Computerworld* more carefully.

20 to 24 points: B. You've made a good start. There are gaps in your knowledge,

but you know what they are. Go to someone who has the answers and fill them in. If you're the chief information officer, aim at the minimum passing score

15 to 19 points: C. You have a reasonable understanding of your employer's business. You probably picked up most of your knowledge by keeping your ears open, but you have also tried to learn

what goes on outside the 15 offices. Read last year's annual report and some sales literature. Eat lunch with people in sales, marketing and production. Show them this quiz, and work out the answers. Any one with management aspirations should be at this level or better.

To 14 points: D. Either you've been around for a few years, or you're a new hire who does good homework. In the first case, make an effort to learn more. In the second, keep it up and your score will improve.

To 10 points: D-. Make sure your technical skills are current.

To 4 points: F. Attend the next new-hire orientation. This time, stay awake.

Mallach chairs the MIS program at the University of Massachusetts Lowell and consults executives on the effective use of information and information technologies.

Net computers? Not in this millennium

John Gantz

With the help of oration and snappy demonstrations, Larry Ellison and Scott McNealy have created the appearance of a real business market for network computers — if not the market itself. Oracle has its Network Computer profile. Sun has its JavaStation. Microsoft and Intel have their NetPC. IBM has a new division to produce these things, and a choir of born-again X terminal makers is singing backup to the gospel tunes of Ellison and McNealy.

But these devices definitely aren't going to replace PCs in corporate America. They might replace text terminals, show up inside kiosks and provide an upgrade path for X terminals, but they won't replace the average business PC. So don't get in a lather about all the publicity, and don't try to force network computers down your users' throats.

What scares me is that the network computer concept sounds so right for IS shops. Wouldn't you rather have central control of your end users' configurations, software and applications? Wouldn't it be

easier to manage one big server than to manage hundreds of loosely coupled desktop computers? Wouldn't the cost of administering network computers drop to zero compared with PCs, which we now know cost tens of thousands of dollars per seat in their life-times?

Maybe. But you'll be bucking the natural end-user preference for chaotic and inefficient self-determination over well-ordered, server-

dominated efficiency. Besides, the business case for network computers isn't as strong as the publicity machine suggests.

International Data Corp. recently did cost-of-ownership studies of network computer prices — diskless PCs and X terminals — and found that they rated better than conventional PCs in some cases and worse in others. The terminals won in "content" productivity environments where the user runs a single business application all day. In this case, the network computer price has lower maintenance, upgrade and training costs, and less downtime. But in the typical office environment where the computer gets occasional use for a variety of tasks, the advantage is more iffy.

It doesn't matter. Even if network computers were free and

administration was 10 times easier than for PCs, they wouldn't take over the world in this millennium.

As many IS managers recently pointed out [CW, Nov. 18], there are back-end costs to support skinny clients, not to mention a huge problem dealing with legacy systems and applications.

Most IS managers I know worry more about migration to NT 4.0 — another kind of network computing — than rewriting applications for JavaStation. We have to go through the cut-over to the year 2000 before we're dealing with anything as radical as network computers and applet-based computing.

Having said that, I can see the day — many years from now — when the network computer will rule. And it may become a fine consumer electronics device for World Wide Web-based personal transactions. I just can't see it revolutionizing corporate IS in the next five years. Even if initial investments had a one-year payback, it would take up to 10 years to redesign our core business applications to exploit that return on investment.

Gantz is a senior vice president at International Data Corp. in Framingham, Mass. His Internet address is jgantz@idcresearch.com.

IS managers are more worried about NT migration than JavaStations and applets

COMMENTARY

Handicapping Novell's future

DAVID MOSCHELLA

THERE'S NO SECRET Novell is a prime acquisition candidate. The company's huge installed base and valuable di-

rectory software can't be reconciled with its floundering \$30 per share stock price. Expect a deal within the next six months

— perhaps before year's end. A revitalized Novell would clearly be good for customers and the software industry.

PLACE YOUR BETS

The real question is who will step up and make the first offer. The following are the odds and the upside:

■ **IBM**, p. 9. It's no longer the heavy favorite it once was, but IBM still needs all the firewalls it can get to fend off Microsoft's aggressive enterprise push. Its recent stock surge makes this the ideal time to buy. It's like getting a 30% discount on the purchase price.

■ **Cisco or 3Com**, p. 9. These two are in a dogfight in an exploding market. Both want to sell more network hardware, need broader channel support and are getting heavy into the network management business. Both are stock-rich and have the cash to pay for Novell.

■ **Netscapes**, p. 9. At some point, Barksdale and Co. will admit that it takes more than a browser; some neat World Wide Web servers and standards support go the distance against the Microsoft juggernaut. Novell is Netscapes best chance to join Microsoft, Oracle and Computer Associates as leaders of the independent software industry.

■ **Compaq**, p. 9. Compaq has been dipping its toes into the acquisition waters, with purchases of Thomas-Conrad and Network. It also has a partnership with Cisco and a new Enterprise Computing Group. This activity sets the stage for something big.

■ **Hewlett-Packard**, p. 9. Supporting RISC, CISC, Unix, Windows NT and NetWare would make Hewlett-Packard the most ecumenical of vendors. Its purchase of Novell would mirror IBM's acquisition of Lotus. This would mark the return of the systems companies, Part Deux.

■ **Sun**, p. 9. Sun is now a server company: NetWare and Solaris, along with Java, would help Sun support all those pesky Windows PCs and maybe even a few network computers.

■ **Microsoft**, 20-1. Don't laugh. Put Novell's directory software on Windows NT to manage Microsoft and non-Microsoft systems, and the systems software might be over. The antitrust watchers might have to turn the other way if it's clear that other companies could have bought Novell but chose not to.

■ **Oracle**, 20-1. Larry Ellison needs to expand into small and medium-size business markets before Microsoft gets hardcore about the migration database business.

■ **Electronic Data Systems**, p. 9. What better way to show off its new freedom from General Motors? Whether Novell rises or falls, ED's network services business would be strong for years.

■ **Computer Associates**, 25-1. It's been said that every ecosystem needs a scavenger. This makes CA the lobster of the information technology industry.

■ **All others**, 20-1. AT&T, MCI/British Telecom, a Japanese or European technology giant? It's hard to say which of these would be more scary for Novell customers.

Any takers?

Moschella is senior vice president of research at Computerworld, Inc. His Internet address is daid_moschella@cw.com.

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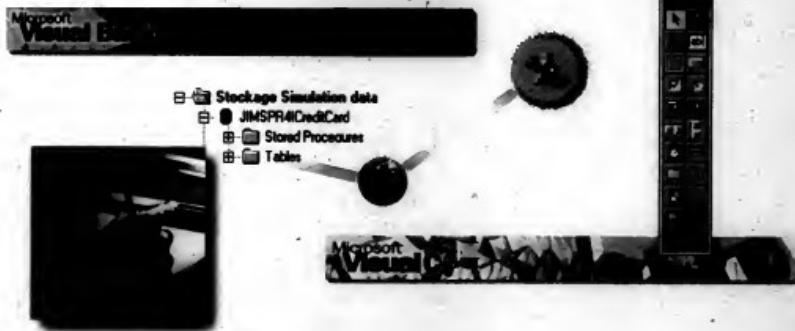
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Net devices prompt storage concerns

CONTINUED FROM PAGE 42

important to us to have throughput that's instantaneous," he said.

Requino Abdullah, director of global computing and communications at S.C. Johnson & Son Inc. in Racine, Wis., said he worries about the cost for servers on a

network of these devices. He also plans to try Network Stations.

"IBM tells me there will be 50 Network Station users per Windows NT server," Abdullah said. "Right now, I'm getting 500 users on a Novell server."

But William P. Phelan, vice president of technology at Florint's Transworld Delivery in Detroit, said he expects to get 1,000 of Sun Microsystems, Inc.'s Java Stations per Sun server.

Greater costs for servers won't be refe-

rred with low-cost network computers. "It's a pretty winning economic dynamic," Phelan said.

Bruce Anthony, chief engineer for Net-work Station at IBM, said storage demands for network computers in a network should be essentially the same as for a network of PCs.

Network computers shift the focus of Net-work Station to being to the server to get the tools they need, network traffic won't be a problem, vendors said.

Estimates are that network computers will produce only 1% of the network traffic generated with an X Window System terminal because of the applet technology. Still, they haven't been tested in the real world, analysts noted.

CIO ROI FYI

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New I/O spec may boost network throughput

By Stewart Deck and Tim Ouellette

USERS SHOULD SOON SEE BETTER PERFORMANCE OUT OF FUTURE PC-BASED NETWORK SERVERS AS VENDORS START TO DELIVER ON THEIR PROMISES TO IMPROVE PC AND PERIPHERAL THROUGHPUT.

At Comdex/Fall '96 in Las Vegas last month, leading PC hardware vendors showed off their first full-system products based on the Intelligent Input/Output (I/O) standard.

PERFORMANCE BOOST

The I/O architecture is a specification, that its backers claim will allow improved system scalability. It was designed to enhance performance and reduce maintenance costs of PC-based systems and network servers.

Vendors admit even the current Peripheral Component Interconnect data transfer rates are too slow for the requirements of high-performance applications.

DG clusters

CONTINUED FROM PAGE A-3

availability clustering and management software as well as the same kind of server hardware that DG offers. But customers typically have to cluster the systems themselves or have it done for them by value-added resellers and systems integrators.

The announcement puts Westboro, Mass.-based DG among the few vendors that offer prepackaged cluster configurations in one box. Marlboro, Mass.-based Status Computer, Inc.'s Radio cluster servers let users combine up to six hot-swappable compute and storage nodes in one chassis. Digital Equipment Corp. also is reported to be developing a similarly bundled server that it will announce sometime in the first half of next year, according to a source close to the company.

Prices for DG's NT Cluster-in-a-Box start at \$75,000.

Standby clusters

Unicsys Corp. last week said it will make Unicsys Corp.'s Standby/Server clustering software available on its Aquainte PC servers.

The software from Orem, Utah-based Unicsys lets users cluster two Windows NT servers together so that if the primary server fails, a second standby server automatically takes over. This kind of clustering requires one server to stand by idle, unlike more recent clustering varieties that allow two active servers to back up each other.

StandbyServer for Aquainte PC servers will be available in mid-December on Unicsys' line of Pavilion and Pavilion Pro servers. —Julieanne Vijayan

One demonstration at Comdex showed that fewer CPU cycles are necessary with an I/O-ready system. That lets it support additional queries, users or applications.

At the show, Compaq Computer Corp., Hewlett-Packard Co., 3Com Corp. and Symbios Logic, Inc. demonstrated I/O-

ready products, including servers, motherboards, SCSI controllers and software.

These vendors and others formed the I/O Special Interest Group (www.120.org) this year to find ways to get PCs and PC servers to work together without being tied to their respective hardware controllers and operating systems.

Microsoft Corp., Novell, Inc. and SCO, Inc. said they would support the I/O architecture in upcoming product releases, including the following:

- Microsoft's Windows NT 5.0 release, due out in mid-1997.

- Novell's IntransWare and NetWare Loadable Modules, available in the second half of next year.

- SCO's next-generation Gemini Unix product.

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Briefs

Sybase 10 accelerates

Sybase, Inc., this week will announce a version of its Sybase IQ decision-support database that runs up to 60% faster than previous versions. Sybase IQ 10.2 will also add support for Unix systems from Hewlett-Packard Co. and Digital Equipment Corp. Meanwhile, Sybase said it is working to integrate third-party online analytical processing (OLAP) tools into Sybase IQ. It declined to comment on reports that it has dropped plans to develop a separate OLAP engine.

Centia in stand alone

Planning Sciences Inc. plans next spring to separate its Centia/DB relational-database division from its integrated front-end development tool. That will let users develop Centia/DB-based OLAP applications with tools such as Visual Basic or PowerBuilder. Planning Sciences said the stand-alone database will be aimed at companies that don't offer the full suite, which costs \$20,000 for a general license. Pricing for the stand-alone software isn't set.

Tools convert currency

Commander, Inc. in Ann Arbor, Mich., plans this week to release a new version of its Commander PDC financial-reporting and analysis software. Commander PDC 4.0 includes built-in OLAP functionality and can automatically consolidate multiple currencies into one that end users are familiar with. The software runs on Windows PCs and starts at \$30,000 for a general license.

WATCH IT GROW

Initially	16
After three months	19
After six months	44
After 12 months	99
After 24 months	255

Source: The Data Warehousing Institute, Berkeley, Md.

Marts tool up

► New products may save time building marts, decision-support apps

By Craig Stedman

THE EMERGENCE of packaged data-mart tools, which began with a few drops in the spring, is reaching flood stage.

The Prism Solutions, Inc. in Sunnyvale, Calif., last week introduced versions of its data warehousing tools that have been repackaged to target data marts, the reduced-scale warehouses that are surging in popularity because of the cost and complexity of enterprise-wide decision-support projects.

The Prism announcement capped off a month's worth of data-mart-oriented rollouts by vendors, including Informatica Corp., Information Builders, Inc. and Vantech Software, Inc. In addition, IBM, Sybase, Inc. and Sagent Technologies, Inc.

STEPS FOR BUILDING A DATA WAREHOUSE

- Map source databases and create extraction programs
- Develop business rules to deal with problem data
- Create transformation routines to standardize data
- Design repository to give views of data to users
- Set up programs to load data into the warehouse

are plying the packaged data-marts waters with products introduced earlier.

Users experienced with the tools have said they don't magically make all the problems associated with building data warehouses disappear [CW, Nov. 18]. But the various products may shave big slabs of programming time off warehousing projects, users said.

For example, Mark Edgerton, MIS director at Marc Hanks Shoppers in Brea, Calif., said he expects to be able to write data transformation and cleansing programs for a new warehouse in fewer than 60 days by using DataStage software from Westboro, Mass.-based VMark.

That process took a full year on the company's first crack at

Mart tools, page 59

Scraw, page 59

SOFTWARE LICENSES

Who's got your code?

By Gary H. Antes

FOR AN international hotel chain, a reservation system is about as mission-critical as software can be.

So it was a startling event when the company that maintained the reservation system for Radisson Hotels Worldwide announced it was getting bailed out and had no intention of releasing the source code Radisson needed to stay in business.

But the Minneapolis-based hotel chain snatched victory from the jaws of defeat because it had earlier insisted on an agreement under which the source code was held in escrow by a third party. The vendor's bankruptcy triggered release of

Middleware takes flight

Aerospace firm builds strategy around objects

By Sharon Gaudin

BRITISH AEROSPACE' Airbus Ltd. is piloting object-oriented technology as it takes its entire computer system in for an over-haul.

The Bristol, England-based airplane manufacturer is revamping its computer system, which handles administration and manufacturing at its 4,500-employee complex. The company's 300 Unix workstations, 1,600 PCs, VAX clusters and mainframes will slowly be replaced as Windows NT moves in for clients and servers.



usable chunk of software that can be dropped into a system and used — instead of writing

Objects, page 61

Delta relies on IBM's MQSeries to tie systems

By Tim Ouellette

DELTAS AIR LINES, Inc. is using middleware from IBM to make sure its data arrives on time and intact.

British Aerospace plans to use CORBA object technology to link its manufacturing systems to the business side

The Atlanta-based company has turned to IBM's MQSeries to tie together applications on a rainbow of different platforms and drastically cut application development costs, said Mark Whitney, senior fellow for middleware at TransQuest, Delta's information systems arm.

The firm is also considering testing middleware from Mi-

crosoft Corp. that could help its Windows NT desktops exchange data with a slew of legacy systems.

MQSeries delivers data messages between different systems and applications, keeping the messages "queued" until the destination is ready to receive the data. For example, if a receiving server is down, the data message will remain queued and won't be lost.

"Now we can gather all our disparate information and drop it into a queue and bring it into one database," Whitney said. "You can begin to join information you never could join before."

TransQuest's first use of MQSeries can be seen on Delta's World Wide Web page (www.delta-nicom.com). Called FlightLegs internally at Delta, the application provides real-time updates of flight locations and activities. Data collected from systems on airplanes and on the ground can be sent to one place without regard

Delta, page 61

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Apple spreads Web apps to Windows

By Lisa Piasecki

APPLE COMPUTER, INC. plans to deliver its multimedia technologies to users who create World Wide Web content — no matter what desktop platform they use. The move comes as the company fo-

cuses on the booming Internet and intranet markets. Non-Macintosh users could benefit from Apple's graphics and virtual reality expertise and could have more choices when it comes to integrating those elements into Internet and intranet applications.

Apple in July established the Interactive Media Group to deliver graphics and multimedia technologies on Macintosh and Windows platforms. Because graphics, images, video clips and other digital media are included on most Web sites, Apple officials said the

company is well-positioned to increase its share of the Web site content creation market. Dataquest, a research firm in San Jose, Calif., estimates Apple holds 63% of that market already.

The foundation of Apple's strategy is to provide a "universal digital container" for multimedia content via its QuickTime Media Layer (QML). QML is a set of application programming interfaces that connects the operating system to various types of digital media to handle the creation, storage and delivery of those elements to users, regardless of the platform or application that created the elements.

Other big Apple products in the company's product arsenal include Macintosh and Windows versions of QuickTime, QuickTime VR (virtual reality), Digital Video Disc ROM and digital asset management tools.

Dan Levin, an analyst at Dataquest, said Apple's decision to concentrate on Internet and intranet technologies comes at the right time.

"Apple is seeing erosion in several of its key markets, [including] desktop publishing and multimedia. And Apple, like everyone else, is transitioning what they can to Windows-based platforms," Levin said. "Apple's current management has more of an attachment to revenues than [to] any given platform."

That is why part of Apple's message last month was an aggressive move to be "platform agnostic," said Ellen Hancock, Apple's chief technology officer.

Macintosh users have responded to Apple's stepped-up efforts to integrate multimedia and the Web.

"We use QuickTime animations to help explain breaking news," said George Rorick, director of graphic services at Knight-Ridder/Tribune Graphics News in San Francisco. "The company generates animations and electronic images for more than 100 television stations, as well as its own Web site."

"We want users to get more than just the 'wow' factor. We want them to be able to get a better understanding. We are not currently using QuickTime VR, but we could use it to render an image of, say, an air bag and let users be able to turn that image around and look at it. That would help tell the story," Rorick said.

Rorick said animations and visual images on the Web are more plentiful and sophisticated than a year ago. "And I expect even more next year," he said.

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Escrow

CONTINUED FROM PAGE 53

the software, which is maintained unchanged by Radisson.

Software escrow isn't a new concept, but its use is increasing as applications shift from back-office support functions to vital, time-sensitive service delivery duties. A wave of mergers, acquisitions and bankruptcies in the software industry also makes the concept even more compelling.

"In any software transaction where there's no aggregated license, the user ought to at least look at the possibility of escrow," said Bernard Gerdelman, an attorney at Newburger & Bossomyer in St. Louis.

ESCROW BASICS

Escrow agreements are three-way contracts that involve buyers, sellers and a neutral third party that holds the source code. Terms of the agreement specify when the user may obtain the code — usually when the vendor becomes unwilling or unable to maintain the software as specified in the agreement.

Amoco Corp. in Chicago has 15 or so major pieces of software in escrow at any given time, said G. Geoffrey Wood, a senior acquisitions analyst. For example, Amoco insisted on an escrow arrangement for some important imaging software because the vendor was a new com-

SOFTWARE ESCROW ADVICE

I Escrow isn't warranted if software isn't critical, isn't expensive or can be easily replaced

II Ask if the vendor will give you direct access to source code

III In the agreement, seek broad terms in the triggers that will release the code to you

IV Make sure the software release triggers are clear

V Have an independent party verify that all needed software is escrowed

VI Use your source code access as a bargaining chip with current and prospective vendors

VII Even with the source code, you may be unable to maintain the application

pant with unproven reliability.

"Lo and behold, a couple of years later, we got a call from them saying they were going out of business," Wood said. "But we were able to retrieve the source code from DSi."

Data Securities International, Inc. (DSI) is an escrow agent in San Francisco.

The software, which Amoco used to manage and display engineering drawings, was bought by another company. Having the source code "put us in a very good bargaining position, both with the new owner and with other vendors that were hounding us to switch," Wood said.

Still, software escrow is no panacea, warned Scott Heintzman, vice president of reservations and information services at Radisson. "The big caveat is: if the vendor contests the release, the escrow agent doesn't have to make the release," he said. "You may have to go to court to prove that it has to breach [for contract], and that could take a long time."

Heintzman advised users to get good legal help and to ensure that contract terms for release of the software are "terribly, terribly clear."

Karen Cone, a vice president at Gartner Group, Inc. in Stamford, Conn., said users should make sure escrow agents update their copy of the source code as the software changes. She also advised against simply signing on with the vendor's escrow agent. "You want to have an agreement directly with the escrow agent, so you are his customer, too," she said.

Gerdelman said vendors often resist escrow agreements at first but will usually go along if users are reasonable. "There are all sorts of ways to work with the terms — especially the triggering terms — to give one or the other party more comfort," he said.

Mart tools

CONTINUED FROM PAGE 53

warehousing, when it had to take "a mostly customized approach to extracting the data," Edgeron said. And that project involved just one source database, whereas the newer one will be fed by multiple sources, he added. Harte-Hanks Shoppers is a unit of Harte-Hanks Communications, Inc. which publishes advertising shoppers.

A packaged set of tools that handles multiple phases of a warehouse project

also saves users from having to tie together products from different vendors, said Meri Lea Miller, a data warehouse project manager at the Municipal Electric Authority of Georgia.

The Atlanta-based utility plans to use Smartmart tools from GroupScan in New York to develop a series of departmental data marts. "Less vendors to deal with means less headaches for us," Miller said. She said she hopes training and support will be easier with a one-vendor approach.

As with most new products, the data mart tools aren't completely mature, users said. For example, PowerMart,

software from Informatica in Menlo Park, Calif., could use more flexible load-scheduling and repository-mapping capabilities, said Jonathan Wilshire, a data administrator at San Diego Gas & Electric Co.

But PowerMart offered "a quick tactical approach that was simple to use and had a quick turnaround," Wilshire said. An initial proof-of-concept data mart took eight months to develop, which was longer than the utility's goal of six months. But that was more because of limited resources and the addition of a mix of new middleware than any problems with PowerMart, he said.

NEW PRODUCTS

McAfee Associates, Inc. has announced a groupware antivirus product line that provides virus protection for Lotus Notes.

According to the Santa Clara, Calif., company, the components are GroupScan for Notes desktops and GroupShield for Notes servers.

Features include Notes client- and server-based virus detection, quarantine and security enhancements to protect against possible exposure to Notes macros viruses.

Pricing starts at \$30 for GroupScan and \$600 for GroupShield.

McAfee Associates
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www.mcafee.com

DELLPOINT, INC. has announced QuickSite Developer's Edition, software for World Wide Web site creation and management.

According to the Monterey, Calif., company, the product gives professional Web developers full control over HyperText Markup Language and other aspects of Web creation.

It includes 3D Web Site Builder, QuickScript scripting language, embedded graphics technology based on DigitalStyle templates and reporting capabilities.

Pricing starts at \$495. -

DellPoint
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www.dellpoint.com

SYMANTEC CORP. has announced that ACT 3.0, contact management software, is available for Windows 95 and Windows NT.

According to the Cupertino, Calif., company, users can maneuver in and out of applications and Web sites while maintaining constant access and integration with sales and other contact and calendar information.

The latest release features the ability to attach letters and files to contacts and simultaneous views of calendars by day, week or month.

Pricing for Windows 95 and Windows NT versions of ACT 3.0 starts at \$199.95 or \$69.95 for upgrades.

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July 30, 1996

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FRANKLY SPEAKING

Who needs standards?

FRANK HAYES

DO ACTIVES AND JAVA-really need to become "official" standards?

Back in August, Microsoft started talking about turning ActiveX over to an independent standards group. Now, Sun Microsystems says it always planned to do the same with Java eventually. Suddenly, standards groups have changed from the computer industry's wallflower to the busiest date in town.

Those standards may be good for somebody — but not for corporate software developers.

There are now some 500 software vendors that build ActiveX components and nearly 200,000 developers who write Java applets and applications. They don't seem to be confused about ActiveX and Java standards.

Their test is simple: If an ActiveX component works with ActiveX tools and applications such as Borland's Delphi and Microsoft Word, it's standard. If a Java applet runs on Netscape's Navigator, Microsoft's Internet Explorer and other Java-supporting Web browsers, it's stan-

dard. If new Java and ActiveX tools work with existing applets and components, they're standard.

In other words, if it works, it's standard. If it doesn't work, it isn't.

For corporate developers, that very practical test has an obvious advantage: Things that work together properly will help get projects finished on time and under budget. And things that don't work together won't — no matter how many "official" standards they "officially" meet.

Independent standards are great stuff when they solve a real problem. For example, Microsoft's Open Database Connectivity (ODBC) is actually based on a standard called SQL Access, which was designed to create a standard system for querying relational databases.

Oracle, Sybase and other big database vendors worked on the SQL Access specification, but in the end they dumped it in favor of their own proprietary query languages. Microsoft was the only big vendor that adopted SQL Access — and although ODBC isn't perfect, it has

said object technology should give him the cross-functionality and flexibility to meet rapidly shifting business needs.

The aerospace firm is going with a Windows NT environment, but it has chosen Common Object Request Broker Architecture (CORBA) middleware instead of Microsoft's Component Object Model (COM). CORBA is an industry-standard, cross-platform way to let applications and components communicate and invoke one another — in essence, the system's plumbing. COM is proprietary technology limited to Microsoft platforms.

"CORBA is an emerging standard, and

made life easier for lots of client/server developers.

Sun has also pushed formal standards for years. At the company's annual Conference on Technologies, researchers come together to connect their hardware and software and physically test to make sure all the different versions of TCP/IP and other Internet technologies actually work together. Next year, they'll be testing Java, too.

But what practical benefits will come from the current round of my-standard-is-bigger-than-yours standard swagging?

Microsoft and Sun would do better to focus on solving the real problems in ActiveX and Java. Microsoft should beef up its underpowered, hard-to-scale Distributed Component Object Model, which is supposed to provide the backbone for enterprise client/server applications that use ActiveX.

Sun should fix the bugs in the Java libraries it gives away for free and arm-twist its partners such as Netscape, Symantec and Borland to agree on common interfaces for tools and components.

There are things that will cut costs and complexity for corporate software developers and let you concentrate on solving business problems with ActiveX and Java — instead of shoring up their shortcomings.

Hayes is Computerworld's staff columnist.

Objects

CONTINUED FROM PAGE 53

code to build a new application.

"Our IT grew up without any sort of architecture," said Jon Schechter, head of information technology at British Aerospace. The appeal of objects, he said, is that "they can be altered and specified internally without impacting the whole structure."

Schechter, who is on loan to British Aerospace from IT outsourcing Computer Sciences Corp. in Farnborough, England,

we wanted to pilot this technology with an industry standard," Schechter said. "We're trying to be totally platform-independent, and we hope moving to CORBA will allow us to do that."

But rebuilding a computer system also requires new ways of thinking, said David Kelly, an analyst at Hurwitz Group, Inc., in Newton, Mass. Developers and IT staffers at British Aerospace will need to start visualizing the various applications and business functions as objects, he said.

"They're going to be dealing with trust issues because they have to write less code and reuse someone else's," he said.

be rolled into a Windows NT transaction server later next year, Microsoft officials said.

With the help of gateway software from Level 8 Systems, Inc. and a continued civil interchange between IBM and Microsoft on the project, TransQuest hopes to run both Falcon and MQSeries middleware. Level 8's Falcon gateway lets Windows NT applications exchange data with MQSeries messages.

"We are delighted with the cooperation between IBM and Microsoft on MQ-Series," Whitney said. "That is a positive, because we have such a heterogeneous environment and don't want to make a choice between one or another vendor."

Delta

CONTINUED FROM PAGE 53

for the original delivery platform.

At the same time, this information can be delivered to executives, employees at an airport gate, air traffic controllers and maintenance workers who must schedule repair work and shuffle planes in and out of the hangar.

TransQuest will also use MQSeries for several other projects that let Delta's widespread client/server applications converse with the Transaction Processing Facility (TPF), the central airline process

system running off an IBM System/z900 mainframe.

These include electronic ticketing and reservations and information kiosks located in airport terminals, all which require secure, unbroken communications.

"We don't want our client/server systems to even know about TPF," Whitney said. "With MQSeries, it is almost like a secure black box for data."

Although TransQuest purchased MQSeries for Windows NT, its client platform of choice, the firm is also looking at using Falcon. Microsoft's middleware for Windows NT, Falcon will be available early next year, and it will

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Briefs

TELECOMMUNICATIONS

PCS untethers utility workers

By Kim Girard
and Mindy Blodgett

CONSOLIDATED EDISON'S Learning Center in New York required a telephone system for a workforce that was tired of playing phone tag and trying to track down one another in a building the size of five football fields.

A new phone system had to provide an affordable and simple way to contact teachers, visiting executives and facilities managers who are constantly moving from the classroom to

the training floor. The facility teaches employees everything from Windows 95 to cable and wiring techniques. Con Edison's learning center also hosts training drills in which employees re-enact disasters, including oil spills and other emergency situations.

MAKING CHOICES

After investigating different options, Dominic Giangrasio, department manager of technology services at Con Edison, chose a \$70,000 personal com-

munications system that arms employees with 35 wireless phones connected to nine Nymex Corp. transmitter sites in the building.

PCS is a new digital technology that transmits calls at a higher frequency and at lower power than conventional cellular networks. PCS phones weigh less than cellular phones, have a longer battery life and boast clearer sound.

The phones, made by Ericsson, Inc., of Dallas, hold their charge for five hours and can be used, for now, only inside the building. PCS, page 65

Metering tool handles NT, NetWare

By Patrick Dryden

ON TECHNOLOGY CORP. just shipped a server-based tool designed to let users more tightly control application use on net-

works — possibly pirated — copies of software. Metering tools limit total concurrent usage according to vendors' license agreements. An organization can save money by licensing only the number of copies its users need at one time, instead of supplying one copy per potential user or buying a site license.

PRODUCT FEATURES

The SoftTrack for Windows NT console runs on a desktop computer under any version of Windows. It presents a single view of the applications in use by collecting information from SoftTrack modules that run on network servers, not at user stations.

That especially helps the longtime "NetWare-focused ships" adapt as Windows NT spreads throughout their environments, according to beta-tester Jeff Klein, network administrator at the Idaho Department of Labor in Boise. And the bigger the coverage, the better the savings.

"You want as big a snapshot



The SoftTrack for Windows NT console runs on a Windows desktop that collects software usage data from servers

works that run NetWare and Windows NT Server.

The license-tracking product, SoftTrack for Windows NT, can monitor and control the use of designated applications by clients attached to Microsoft Corp.'s Windows NT Server or servers that run Novell, Inc.'s NetWare.

Besides watching for unau-

What's in store for Microsoft's Windows NT

Microsoft Corp.'s Windows NT Server is making a name in the network operating systems market. But Microsoft has frequently changed plans on the road to Cairo, the next generation of NT. Computerworld senior editor Laura DiDio recently spoke with Enzo Schiavone, Microsoft's Win-

dows NT group product manager about the Cairo plan, the features in NT 4.0 and what users can expect in the forthcoming NT Server 5.0 due late next year.

CW: Could you explain the main thrust of the features in Windows NT 4.0?

SCHIAVONE: We focused on three key areas — built-in intranet services, enhanced performance and scalability and ease of use — with the new Windows 95 user interface. In terms of the built-in intranet services, we have IIS 2.0, FrontPage and the Index Server, which enables businesses to index documents across the corporate intranet.

With other intranet technologies, you can only index [HyperText Markup Language] docu-

ments. Windows NT, page 65

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PCS untethers utility workers

CONTINUED FROM PAGE A3

center. By going wireless, the company has avoided expensive rewiring and installation costs of equipping training sites and classrooms with telephones.

Steve DiNardo, facilities manager at Con Edison, said a PCS phone has enabled him to skip the half-hour he typically spends each day listening to voice mail.

"The time at my desk is spent taking care of paperwork and signing orders," DiNardo said. "I'm not bothered by the phone calls."

For a company with a strong need for mobile voice communications, PCS is the way to go, said Andrew Seybold, an analyst and editor of the "Outlook on Mobile Computing" newsletter in Boulder Creek, Calif.

SoftTrack

CONTINUED FROM PAGE A3

as you can get of your entire network to help control concurrent licensing costs," said Christopher Germann, an analyst at Gartner Group, Inc. in Stamford, Conn.

Other vendors also provide metering for both parts of a large network, but their products demand more preparation than SoftTrack.

The alternate approach for metering usage in mixed environments requires that managers install monitoring software on each user's desktop. CentriMeter from Tally Systems Corp., Hanover, N.H., for example, meters from each desktop. LANDesk Management Suite from Intel Corp. and SaberTools from McAfee Associates, Inc. in Santa Clara,

But Seybold said choosing between PCS and other wireless networks, such as Cellular Digital Packet Data (CDPD), is a "bit of a crapshoot" right now.

"Prices for all of these services are unlikely to go down in the near future," Seybold said. "And you just don't know which of these competing protocols will emerge as the stronger."

RUNNING TESTS

Other departments at Con Edison are testing CDPD, a service designed for voice and data handsets, and several other wireless services, Giangrauso said.

Standard cellular phone service charges would have been higher and cell phones would have been less useful because cellular phone batteries have

a shorter life than the PCS phones, he said.

Con Edison intends to use the PCS system for some future data applications, including message paging, said Bill Domeno, manager of media and systems.

Plans include possibly attaching a computer modem in a classroom to the PCS phone to let users log on to the network through a remote access server. Once carriers complete wide-area PCS networks, employees also will be able to use the phones in the field to send messages to service centers or a supervisor who isn't on-site.

Giangrauso expects to eventually upgrade the phones to support PCS and CDPD so that they can be used all over the city.

Con Edison also may equip other buildings with PCS systems so managers can move among facilities and receive calls.

SOFTRACK FOR WINDOWS NT

Software metering tool for mixed NetWare and Windows NT networks

I Runs entirely on Windows NT Server — nothing loaded at user stations

II Cross-platform monitoring

III Console runs on any Windows server

Calif., require both server and station software.

But many managers prefer to deal with just servers, not desktop machines.

"I don't want to install any more software on 360 machines just for metering," said David Lee, a senior systems

analyst at SSOE, Inc. in Toledo, Ohio. "I don't want to travel to each PC to do anything."

Lee said he liked SoftTrack for that reason and wanted the new version for its support of more than one network operating system. Like a growing number of organizations, the architecture and engineering firm is moving from NetWare to Windows NT Server.

But SoftTrack for Windows NT doesn't yet support Lee's transition setup — NetWare clients connected to a Windows NT server for file/print functions. That fix, as well as support for Macintosh users, should come in this month's maintenance release or an upgraded package for the first quarter of next year, according to officials at On Technology in Cambridge, Mass.

Pricing for SoftTrack for Windows NT is \$995 per 50-user server.

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Windows NT

CONTINUED FROM PAGE A3

ments. The Index Server lets you index any document without requiring a conversion to HTML.

CW: One of the criticisms of NT Server 3.51 was the limited scalability in terms of processors and users. What have you done to correct that?

SCHIANO: Windows NT 4.0 supports scalability of up to 32 processors. You can buy it in increments of two, four, eight processors, etc. Overall, we've enhanced the kernel and developed new [application programming interfaces] that deliver 35% performance increases.

CW: A common gripe among users is that they have to reinstall all their applications from scratch when they migrate from Windows 95 to Windows NT Workstation, and that won't be fixed until NT 5.0 ships at least a year from now. What do users do in the meantime?

SCHIANO: We didn't intend for users to migrate from Windows 95 to Windows

NT Workstation 4.0 at this point. NT Workstation is positioned as a corporate desktop system. But it's not very forgiving for the home PC user. For example, if you have a DOS application that tries to access an interrupt in your hardware, Win 95 will let it run, but Windows NT Workstation protects system integrity and will prevent that.

CW: You shipped the first service pack for Windows NT 4.0 a few months after the software began shipping. Is that indicative of a lot of bugs?

SCHIANO: There aren't a lot of bugs. The one major bug in NT 4.0 that can potentially be a big problem is the one Dell [Computers Corp.] reported.

When users have NT Server deployed in a high-security environment with large files, some of the data can be written incorrectly to the drive. The data isn't lost. We did fix the problem though and called our largest customers. And no one else reported it.

CW: When will users get their first look at Windows NT 5.0 with the enterprise directory?

SCHIANO: First half of '97. And we'll have a very widespread beta of 200,000 or more.

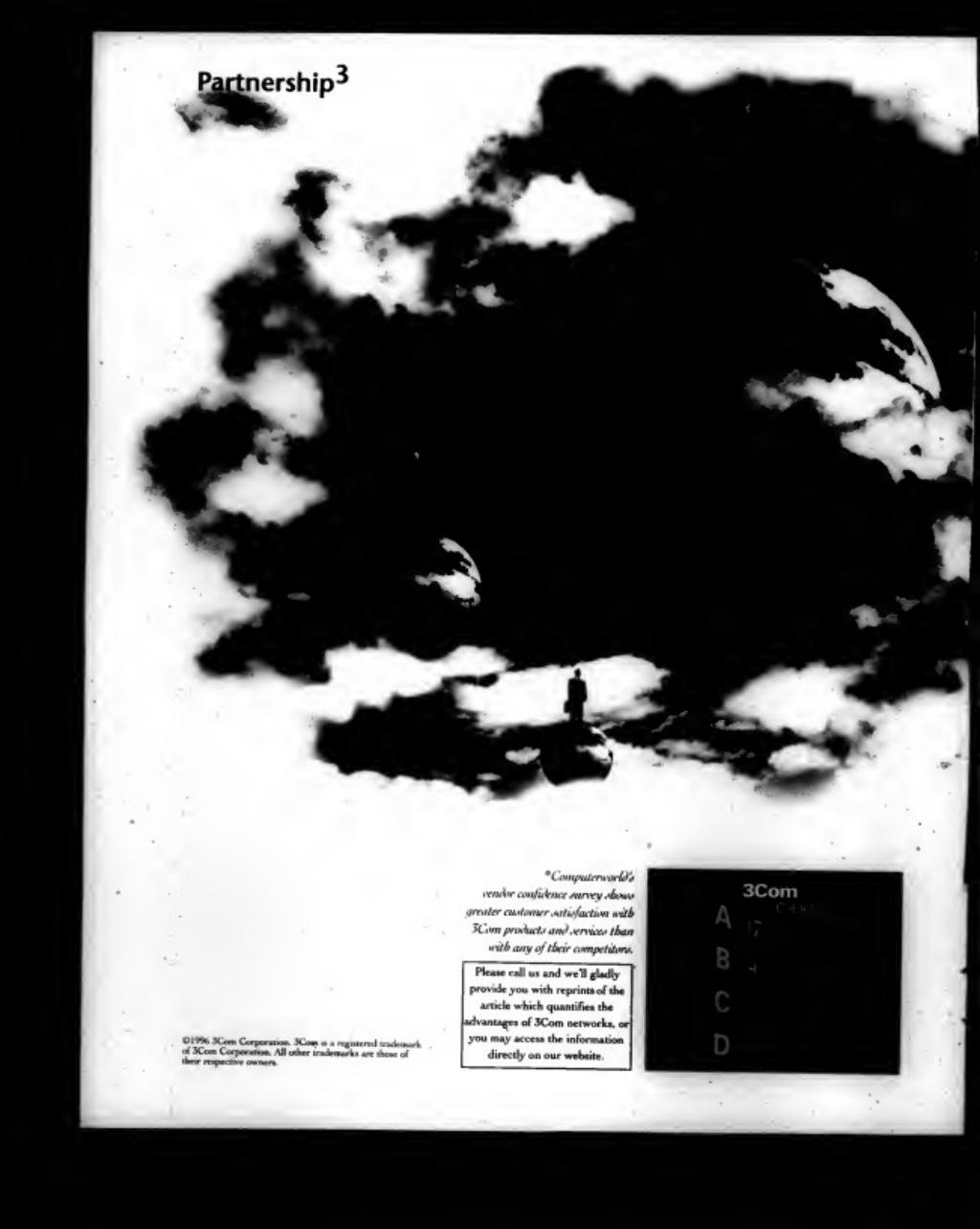
CW: Can you explain what Cairo is these days? Microsoft says it has already released many of the features of Cairo, such as the Windows 95 graphical user interface. So what will be new?

SCHIANO: Cairo, as we know it, is basically done. Many of the features that were slated to be released in Cairo are already out. They include [Distributed Component Object Model], the infrastructure that lets components talk across the intranet.

The new features in Windows NT 5.0 are the Active Directory and the Active Directory Interfaces, formerly known as OLE DS. There's also the Microsoft Management Console, which integrates all the management utilities into a common, extensible console and Kerberos-based security.

The Transaction Server will probably be part of NT 5.0, although we'll probably ship that and our two-phase Wolfpack clustering technology before NT 5.0 as well.

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Siemens AG shuts down business unit

By Tatjana Ritter

DISAPPOINTED WITH the returns on its Networking Systems unit, Siemens AG in Munich, Germany, said it is dissolving the business unit only a/b years after it was formed.

Although Siemens' Networking Systems increased its revenue in the year ended Sept. 30 by 20% to \$733 million over the previous year, the unit finished the year with a pretax loss of \$58.6 million, \$3.3 million more than the year before. The unit had hoped to break even by

1998, company spokesman Werner Busch said.

Siemens created the unit in April 1994 to offer corporate customers and telecommunications companies a one-stop shopping opportunity for turnkey network systems.

Apparently that goal wasn't reached. Siemens said in a written statement that Networking Systems' services and products can now be offered more effectively by Siemens/Nordex Informationssysteme AG and Siemens AG's Public Communications Networks unit and Private Communications Systems unit, out of which Networking Systems originally emerged.

Busse writes for the IDG News Service's Munich, Germany, bureau.

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— Michael Haun, president, Bell-Haun Systems, Inc., Westerville, Ohio

- "I don't pay people to spend time rebooting because Windows decided to tank. With OS/2 Warp 4, nothing fails but IBM's marketing."

— Bill Teags, IS manager, Advanced Package Engineering, Phoenix

- "The features in OS/2 Warp and Warp Server are phenomenal. But deep down, I'm afraid IBM won't market it, and we'll end up like a jilted lover — left high and dry with a niche market operating system."

— Ray Pratts, senior technical analyst, Variable Annuity Life Insurance Co., Houston

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found [Say No Naturally](#) with the latest on treatments, research and herbal care for thinning

hair. Next, since the [Bald-o-Meter](#) site put me in "stage five" of male pattern baldness, I thought I'd search "toupee." But then I saw [Je Suis "Bald"](#) – an on-line journal from a Québécois. The writer's existential triumph over hairline angst made me click into [Bald Pride](#), where chatters encouraged me to shine.

Pumped, I dove into Lycos [Pictures & Sounds](#) and found photos of proud bald celebrities, authors and athletes – not to

mention the president of [RayTone Records](#), who was seeking new talent. After uploading one song from my demo

I landed a major recording contract.



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Customized Web sites

CONTINUED FROM PAGE 73

consumer conglomerate The Virgin Group of Cos., and a customizable job-searching and recruitment site from the Illinois Chamber of Commerce.

Meanwhile, the Swiss Bank Corp. hopes to put up a site that will offer personalized banking and investment information to its customers in Switzerland [CW, Nov. 4].

CHEAP ONLINE

The reason this is the technology that will make the Web compelling for commerce is that it is the first thing you can do inexpensively online that's expensive — or downright impossible — to do off-line.

Other online technologies don't match that description. Online multimedia is grainy, slow and jerky. Internet telephony is cheap, but it's still an awful lot better to just pick up a phone.

And despite the lure of online retail, it's easier for most of your customers to use a paper catalog or hop in the car and go shopping.

But personalization is expensive to provide in the real world.

If you're a bank and you want to provide custom account information, a teller or a phone operator has to be available to supply the information to your customer and wait around while he thinks it over.

If you're a retailer, you have to provide personal shoppers. The Internet can automate those jobs relatively inexpensively.

But "relatively" is the key word. Customization on the Web is inexpensive compared with customization in the real world. But it's expensive compared with simply putting up a site. Web customization of magnitude more expensive.

Prices for customization software from BroadVision, Inc. in Los Altos, Calif., and Brightware, Inc. in Novato, Calif., start at six figures.

But if you want to sell goods or services on the Web, it's all most certainly worth the money.

Up until now, we haven't seen a killer app for the electronic commerce on the Web. But that's changing.

Customization is what will change the Web from a cute toy to a business necessity.

Wagner is Computerworld's senior editor, Internet.

FUTURE SHOPPING MALL?

Projected worldwide spending on the Web



Domino

CONTINUED FROM PAGE 73

language, Whitford said.

Lotus is in a strong position, because it has solid security and replication in its Web server, argued Patrick MacNamee, worldwide manager of messaging at EMI Music, Inc. in New York.

Those are the features that Microsoft and Netscape are racing to add," MacNamee said.

Domino Merchant will be available in the first quarter next year.

The product is expected to cost less than \$5,000.

NEW PRODUCTS

AMERICAN POWER CONVERSION has announced PowerChute Plus 3.0 for Windows NT, an uninterrupted power supply (UPS) software monitoring package.

According to the West Kingsbury, R.I., company, the product was designed to provide Worldwide Web server power protection.

It includes Web Server Shutdown, UPS Management and WebAlert Notifications.

PowerChute 5.0 costs \$99. American Power Conversion (401) 789-5735 www.apc.com

TEAMMEDIA PUBLISHING, INC. has announced Art Vault, a multi-media graphics production tool for Worldwide Web page development.

According to the San Jose, Calif., company, Art Vault has more than 1,500 buttons, bars,

SAP, PeopleSoft apps Web-ified

By Charles Babcock

MAKING SAP FINANCIAL and PeopleSoft human resources applications available from a World Wide Web site is the goal of NetDynamics, Inc.'s latest upgrade to its development environment.

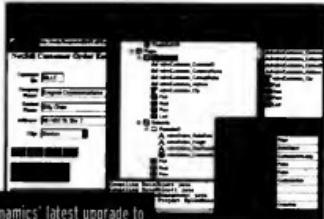
With its Studio Developer and Application Server 3.0, which is available this week, NetDynamics is trying to extend client/server applications across the enterprise using the Internet to deliver them, said Michael Barnes, an analyst at Hurwitz Group, Inc., a consulting firm in Newton, Mass.

Converting workflow and departmental applications into Internet server-based applications helps them scale across the enterprise and makes them available to business partners and suppliers, Barnes said.

NetDynamics in Menlo Park, Calif., focuses on making legacy data and database management systems available via Web servers.

The company is trying to extend its reach to client/server applications.

Version 3.0 includes interfaces to SAP R/3 and PeopleSoft, Inc. software. It also taps into a company's application infrastructure in other ways by interfacing with IBM's mainframe transaction processing system



NetDynamics' latest upgrade to its development environment includes interfaces to SAP and PeopleSoft software

CICS and Gradient Technologies, Inc.'s Distributed Computing Environment products. That new capability makes the resources of those enterprise software systems available through a Web server.

The standard Web site doesn't lend itself to a user-inspired database query, because processing the transaction takes several steps. A Web site connection is normally a session. A server downloads a click-on file to a user, then breaks the connection.

JAVA COMPONENT

NetDynamics' Studio Developer and Application Server 3.0 also gives programmers the tools to develop Java code to manage the connection in greater depth.

With Sun Microsystems, Inc.'s Java logs on the server, a user can launch a query against a database, and the session will be maintained until an answer comes back.

Version 3.0 makes it easier to

provide session control and database access because the number of Java wizards available has tripled.

Wizards are prewritten modules of code that automate a server function and can be dragged and dropped into place in a program under construction. The large number of wizards makes it less necessary to be an experienced Web site builder, said Nina Lyon, president of "Open Systems Advisor," a newsletter in Boston.

Kenny Yuen, an information technology engineer at Hewlett-Packard Co. and Studio Developer provides wizards and code frameworks that make it easy to manage a database connection for multiple users. He said the additions to Version 3.0 will dramatically reduce his coding time for database Web applications.

The environment supplies 200 Java class libraries, which represent standard Web server processes and functions, NetDynamics officials said. The development environment costs \$1,495 for the single-developer version. Pricing for Application Server starts at \$5,000.

INTRA OR INTERNET?

What do you use your intranet for?

E-mail	68%
Document sharing	55%
Internal communications	45%
Electronic forms distribution	38%
Putting HR information	32%
Access to product information	22%
Travel bookings or policies	7%

Source: 254 attendees at Treasury Management Association conference; multiple responses allowed

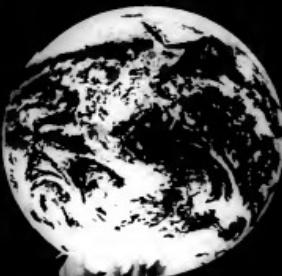
What do you use the Internet for?

Access to information/research	73%
E-mail	68%
Sales and marketing	42%
Access to travel information or bookings	39%
Online business-to-business shopping and purchasing	9%

Source: 254 attendees at Treasury Management Association conference; multiple responses allowed

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One step forward ...

A ruling by a New Hampshire state court in 1869—that's 127 years ago—said contracts for goods or services that are signed and distributed electronically—in this case via a telegraph—are perfectly legal.

"It makes no difference whether the operator writes the offer or the acceptance with a steel pen an inch long ... or whether the pen be a copper wire a thousand miles long," the judge wrote.

... two steps back

But this year, a judge in Georgia thought differently when he ruled on whether a fax could be a writing, or legal contract.

"The transmission of beeps and chirps along a telephone line is not a writing, as that term is customarily used,"

he wrote.

Source: McBride, Baker & Clegg, Chicago

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SHORTS

Web care

A new World Wide Web site has been created for Californians to compare the quality of medical care among health maintenance organizations (HMO).

The site, called California Consumer HealthScope (www.healthscope.org), was developed by the Pacific Business Group on Health, a California-based coalition of 33 public and private-sector purchasers of health care. HMO companies include customer satisfaction ratings and the range of preventive care services provided by each outfit.

The Web-er channel

The Weather Channel and NETDelivery Corp. together will deliver personalized daily weather reports directly to desktops. People can sign up for the free service and select from more than 1,600 worldwide locations. They will receive five-day forecasts with interactive links to maps, national weather and hurricane reports. The service is available by downloading the NETDelivery desktop distribution software from www.netdelivery.com/download/weather/or/www.weather.com.

Passport please

Passport Corp. in Paramus, N.J., has introduced Passport Infirprise, a development tool that allows Internet/intranet application developers to build applications that use Sun Microsystems Inc.'s Java as a front end and also support transaction processing, multimodel architectures and fault tolerance. Passport Infirprise supports Windows 3.1, Windows NT, Windows 95, all Unix versions, network computers and Java. A single developer's license costs \$2,995.

Domino effect hits European carriers

► Three to offer services built around Lotus' Web server

By Torsten Buss

LOTUS DEVELOPMENT CORP. said three major European telecommunications companies are preparing to roll out services built around the company's Domino World Wide Web server technology.

Deutsche Telekom AG will make its Domino-based services available in December, and France Telecom and Telecom Italia will roll them out next year, according to officials at Cambridge, Mass.-based Lotus.

The services are built around Lotus' Domino Services Providers Applications

(SPA), a set of Notes and Domino products and services that businesses can rent from telecommunications companies and Internet service providers.

Lotus has agreements with 16 Internet service providers and telecommunications companies worldwide, company officials said.

ITALIAN PILOT PROGRAM

Officials at Telecom Italia said they selected Notes and Domino as the middle-platform for its Village Intranet and Internet services, which will be available beginning in January.

The Italian telecommunications company is conducting pilots of the service

with the Italian Department of Labor, which uses the Village Intranet and Internet services to connect 600 employees in various bureaus in Italy to streamline the employment opportunity process.

France Telecom previously announced it will provide a Domino service as a key part of its Global Intranet offerings next year. Deutsche Telekom in December will offer its IntraTeam for Notes services to allow large and small customers to quickly deploy intranets based on Domino and Notes, Lotus officials said.

More information on the Domino SPA program can be found at domino.lotus.com/.

Buss writes for the IDG News Service. Mischka buss@idg.com

ONLINE LAW AND DISORDER

Questions of ownership, privacy, invasion, intellectual property and other problems have begun to rear their ugly heads on the Internet. And the U.S. legal system is still catching up with the cyberthieves. Even after it does, laws in other countries will complicate things.

Problem	Example	Protection
Electronic contracts "signed" digitally in one state may not be enforceable in others	Utah doesn't recognize digital signatures; New Hampshire does	Requires users to click a button to accept or decline terms
Copyright violation	Humor columnist Dave Barry stopped posting weekly articles after they were widely copied	State explicit rules about what visitors to a site can do with contents
Jurisdiction	A Missouri court found it had jurisdiction over a California resident, while a New York court found it had no jurisdiction over a Missouri resident	Include disclaimers at the end of Web page forms. Think of a Web site as a national entity.
Trademark violations	Domain names are ripe for dispute	Make sure your URL doesn't violate a trademark; trademark your firm's name
Liability	If material on a Web site to which your site links is illegal, you also could be liable	Think before you link

—Kim Nash

search: sports fan + rabid



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IDC INSIGHT

Successfully Migrating

Corporate America is fast embracing Windows NT workstation for its desktop computing as it seeks a true multitasking, robust, 32-bit OS with reliability, security, and high performance. The Pentium Pro, offering superior speed and performance, is far and away the preferred platform for NT. These were among the key findings of IDC's recent global survey of 1,500 corporate enthusiastic NT adopters and active evaluators.

International Data Corporation (IDC), the world's leading information technology (IT) research firm, recently surveyed 1,500 medium-sized and large corporations around the world about their advanced desktop PC usage and plans via in-depth telephone interviews. Primarily, the research analyzed how corporations are currently using and adopting advanced Windows NT/Pentium Pro systems and what users found as key drivers and constraints. The study focused on advanced adoption so that organizations adopting less than 10% NT systems among their total systems, within the next two years, were excluded from the survey.

The market momentum for NT/Pentium Pro systems will intensify over the next 3-18 months, especially among U.S. corporations. Key drivers for this upward migration include the accelerated price/performance improvements of the Pentium Pro; the increasing availability of 32-bit applications; and recent release and success of Windows NT Workstation 4.0. IDC predicts 1998 to be the pivotal cross-over year when U.S. Pentium Pro Processor PC U.S. sales will exceed Pentium Processor PCs overall, and when NT will surpass Windows 95 on desktops in large corporations.

Key Advanced PC Study Findings

- By YE 1997, half said at least 50% of new PC purchases will be Pentium Pros.
- Corporate user plans by late 1997 include the following:
 - 150% increase in Windows NT
 - 50% decrease in Windows 3.X
 - 50% increase in Windows 95
- Within two years, the majority of internal application development will be 32-bit.
- Reliability, security, and performance are top reasons for choosing NT over Windows 95.
- Twenty-five percent of respondents will gradually roll out NT company-wide; 50% will roll out NT selectively.
- Key NT applications are general office, software development, technical/engineering, customized business, and multimedia.
- Performance and speed are top benefits of running NT on Pentium Pro PCs.
- Cost, hardware requirements, and incompatibility with existing software/peripherals key barriers to adoption.

Why Upgrade to Advanced PCs?

Corporate PC users are constantly seeking better CPU performance, more memory, faster data access times, and more powerful OS and application suites. In the late 1990s, technology continues to accelerate with more intensive requirements due to the increase in the size of applications and graphics-intensive files; expanded multimedia data types (color images, audio, and full-motion video); the inclusion of more software (Web browsers, utilities); and the constant IT mandate to cut costs and improve productivity. In addition, the tremendous growth in the Internet, Web, and corporate intranets is bringing ever-greater amounts of data to the desktop.

Recent and unprecedented price/performance improvements in advanced PC systems have whetted organizations' appetites. IDC PC pricing research indicates the cost of Pentium Pro systems will decline a full one-third to nearly half (or 33-47%) from the beginning to the end of 1996, depending on chip speed. As an industry example, consider the advanced desktop brand series has dropped in price by more than one-third, from about \$4,300 to about \$2,850 in estimated street price, while the overall performance offering has more than doubled. In short, there has never been a time in which corporations have needed advanced desktop PCs more, nor a time in which core justification for upgrading has been stronger for the business enterprise.

Pentium Pro—Platform for and to the Future

The Pentium Pro, Intel's sixth generation microprocessor family, released in late 1995, was specifically designed to optimize the performance of 32-bit code while maintaining backward compatibility with previous x86 code. In essence, the chip is a bridge between today's world, which predominantly uses 16-bit OS (Windows 3.X) and applications, and the emerging world of 32-bit OS (NT, Windows 95) and applications, which is fast becoming the industry desktop standard. The Pentium Pro also offers unparalleled speed and performance through its superscalar and superpipeline design; Intel's "Dynamic Execution," and its L2 "cache on-board" dual-chip module.

As prices further decline, IDC predicts that demand for Pentium Pro PCs will increase significantly, especially in the corporate environment. Current street prices for NT/Pentium Pro systems have now fallen to less than \$3,000—within the range of most corporate IT budgets. Accelerating price competition and expanded product selection will continue through 1997, which will further fuel the market. IDC anticipates Pentium shipments will peak in 1996, and the Pro, with 15 million units, will surpass Pentium sales (13.9 million units) as the dominant PC platform in the total U.S. market by 1998 (see Figure 1).

The Corporate Move to Windows NT

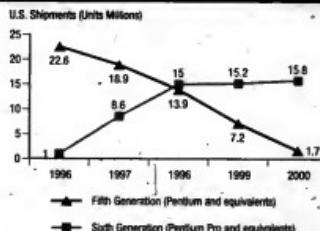
Migration to the 32-bit desktop enables true multitasking, improved stability, virtual memory, multiprocessing, and robustness. More than half (53%) of those IDC surveyed currently do 32-bit application development. Key drivers of 32-bit adoption cited by the IDC user base included new application availability, price declines, performance gains, and the success of NT

Sponsored by



to Next Generation PCs

Figure 1 - Pentium vs. Pentium Pro Processor Ships



4.0. Within two years, three-quarters of all internal PC application development will be 32-bit.

Again, IDC user research bears out corporate America's preference of Windows NT over Windows 95 or any other OS. Corporate users surveyed included in their 12-month plans a 150% increase in the use of Windows NT. They saw a decrease of Windows 3.X or Windows for Workgroups use by about 50% and an increase of Windows 95 by only 50%. Users cited reliability, security, performance, and robustness, in that order, as the most important reasons for choosing Windows NT over Windows 95. The primary departments driving advanced desktop computer system purchases among IDC respondents are MIS/DP, engineering, and R&D—traditional leading technologists, as might be expected. Somewhat surprising, are the current applications users identified running under NT such as general office automation packages (word processing, e-mail, spreadsheets) or today's general mainstream desktop applications (see Figure 2).

Among corporations polled, the Pentium Pro was also the preferred platform to run NT. Fifty percent of respondents stated that at least half of all their new PC purchases will be Pentium Pro systems by the end of 1997..

The Call to Action

The decision of when and how to upgrade an IT infrastructure is difficult and complex. Hesitating can be even more hazardous, possibly leading to forfeited opportunity costs and lost productivity. As we approach 1997, it is clear that the U.S. corporate migration process to NT/Pentium Pro PCs is far beyond initial assessments.

Perhaps the only thing as important as choosing the right advanced PC is choosing the right vendor partner behind it. The top criterion among the survey respondents were price/value and technical support. IDC recommends users to look for PC vendors that push the price performance

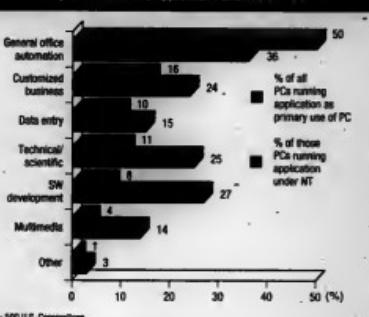
ratio and offer the most complete total value package. Closely examine what prospective vendors include in:

- Hardware (components, configurations, investment protection);
- Cost of ownership (virus protection, data and system management, real time diagnostics);
- Productivity enhancement (Internet/intranet, utilities);
- Vendor viability;
- Product quality and price/performance.

IDC predicts that 1998 will be the pivotal cross-over year when Pentium Pro outstrips Pentium U.S. sales overall, and NT surpasses Windows 95 on desktops within large corporations.

Given its total value, performance benefits, and headroom, the time for serious consideration of NT is here. The collective experience and insights of 1,500 corporate users—senior IT managers already in upward PC migration, can greatly benefit an organization's information technology design and planning.

Figure 2 - Current PC Applications Shipped (%)



This Insight was written independently by IDC and sponsored by AST Computer. For a complimentary copy of IDC's full White Paper on migrating to Next Generation PCs (Asian, European or U.S. versions available), please call AST at 1-800-447-0023 x 100 or check the AST Web site at <http://www.ast.com>

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Briefs

AT&T going it alone. AT&T has ordered eight network computers from Broadband Technologies, Inc., a purchase worth \$2.5 million, according to Broadband. The telecommunications giant will use the broadband XLC Internet division to expand its enterprise operations for long-distance communications.

The new division will bring three XLC modules alongside purchased three previously from BellSouth Corp., the parent company of Broadband.

The new division has been constructed for AT&T's needs. The network computers will give AT&T access to some of the company's current applications as well as allow a migration path to Windows NT Server and an Internet, according to a statement of Broadband.

IBM, Unisys in pact. IBM and Unisys Corp. have signed joint agreements with Novell, Inc., to market its Novell-based networking software via Novell's millennium programming partners. The agreement includes Novell-developed technologies including analysis, planning, and

Siemens partnering deal. Siemens AG, Germany's largest engineering firm, has awarded a three-year, five-dollar contract to GTE Systems, Inc., in Chelmsford, Mass., to manage legacy systems for eight German government clients and two international clients.



WHAT HACKERS DID WHEN THEY ATTACKED

Probed/scanned systems	14.6%
Compromised E-mail or other documents	12.6%
Introduced virus	10.6%
Compromised trade secrets	9.8%
Downloaded data	8.1%
Changed data	6.8%
Installed password sniffer	6.6%
Denied use of service	6.3%

Source: 200 Fortune 1000 companies reporting 603 network intrusions by Deltek.

Source: Harbin Research LLC, Deltek

Distributed defense

► IS must block internal, external threats

By Gary H. Antles

DISTRIBUTED SYSTEMS give users access to data and applications they never enjoyed in the mainframe world. Unfortunately, those applications also present major headaches to security-conscious information systems managers.

Not only are distributed systems harder to manage, they are more vulnerable to a range of assaults, from inadvertent misuse to malicious attacks by outside hackers and employees.

In a recent survey by Datapro

Information Services Group in Delran, N.J., only 54% of 1,337 information security professionals said they had written security policies. That's down from 82% in a 1994 survey. According to Datapro, the drop is due in part to the trend toward distributed systems.

Ted Combe, manager of computer security at AlliedSignal Aerospace Co. in Kansas City, Mo., said his company has a highly decentralized computing environment but has written security policies to protect it. He

Distributed, page 82

Determines the right skills, personality

Test matches workers, jobs

By Julia King

MATCHING THE right information technology professionals to the right job helps bring projects in on time and budget. It also can save millions of dollars that companies now spend re-training IT workers for projects that may not suit them.

Those key goals of a software-based skills assessment from Cambridge Assessment Center, Inc. in Cambridge, Mass. So far, the Cambridge Assessment Methodology (CAM) has been rolled out to a handful of large companies, all looking

Attributed to look for in a year 2000 programmer

- Inherent of repetitive tasks
- Prefers stability
- Able to deal with non-standard situations
- Wants to see things through to the end

to hire or train the best and the brightest for very different kinds of mission-critical IT projects.

Year ago, work, for example, demands people who are technically proficient in Cobol and other mainframe languages. But statistics show that patience, an eye for detail and a high degree of loyalty — all traits that can be quantified by testing — are also key to getting the job done.

"With year 2000, you want people whose social needs are tied to your organization. You want people who, no matter how much money is waved under their nose, will remain with your company because they have an ego need to be the project through," said Larry Sheehan, chairman of Cambridge Assessment Center.

The best object-oriented developers, on the other hand, are highly creative and tend to be more independent.

The attitudes and archetypes of the two are very different. Unless you do some screening on the front end, it's a random shot.

Test matches, page 82

HMO writes call center technology Rx

By Thomas Hoffman

UNTIL RECENTLY, Kaiser Permanente's Northeast Ohio health care practice was answering roughly half of its yearly 2 million member calls in 60 seconds.

For sick patients who need immediate answers to their medical questions, it was "not very good telephone service," admits Jan Hanna, a medical faculty administrator at Kaiser for the Cleveland Medical Center.

Using software from major health care providers, and other large firms in general, Kaiser Permanente Health Plan, Inc. is seeking to convert this flaw into a strength by investing in technology. It is an effort to transform

HMO call center, page 82

Hot

► A recent survey of 334 corporate finance executives at the Treasury Management Association conference shows:

60% have or are currently setting up intranets

78% are providing Internet access to employees

Source: Louis Harris & Associates for American Express Corporate Services

Mainframe traits

- g Higher need for company affiliation**
- g More positive service attitude**
- g More deliberative**
- g More disciplined**

New technology traits

- g Thinks more abstractly**
- g Slightly more ambitious**
- g Tendency to think in a more parallel way (rather than sequential)**
- g More disciplined**

Test matches workers with jobs

CONTINUED FROM PAGE 81

as to whether someone will be successful," said Sheehan, who is a psychologist and former human resources executive at Circuit.

The Cambridge Assessment Methodology identifies these various attributes by analyzing workers' answers to a collection of 400 questions. Users take the test on a PC. Pricing for a full-blown assessment is about \$325 per person. Pricing for the new millennium Division version, which specifically tests for year 2000 talent and will be announced this year, costs \$150 per person.

Another assessment with a plenty positive answer to it: First National Bank of Chicago, which is going the fast-by-outset object-oriented development,

Home Savings Bank in Irwindale, Calif., gives the test to all applicants for 15 positions "to distinguish candidates we consider qualified and, at the next level, to determine how they'll fit into the personality of the company and the job," said Peter Pitsker, a vice president and manager of 15 client services.

Questions on CAM tests differ from company to company, depending on the particular train a company is seeking in an IS employee. Each test is a subset of CAM's 400 original questions.

WORKS FOR THEM

Pitsker said his bank has found the tests "to be extremely effective. We've done this about a dozen times already, and once we've gotten to know the people who we've hired, the profile we've gotten back from Cam-

bridge has turned out to be extremely accurate."

"Before, we were using phone interviews," Pitsker added. "The fact that we're now using technology as also saving us quite a bit of money."

NEW BOG

Formal skills and psychological assessment programs aren't exactly new to 15 organizations. For the past few years, companies have used the Myers-Briggs Type Indicator and Kolbe Index to choose teams for software development and other projects.

The Cambridge Assessment Method goes a step further by matching various soft skills and traits that fit into a company's culture and then testing people for those traits, Sheehan said.

That is done by first testing a smaller sample of successful employees to determine which traits have contributed to their success and the success of the company.

Other workers' or job candidates' test results are then statistically compared to the corporate model.

At Home Savings, "we define the main skills we're looking for in the perfect candidate. The responses are then compared to that profile, and any gaps lead us to issues and concerns with a particular applicant," Pitsker said.

Garner Group, Inc. analyst George Raphaelian gave the CAM high marks:

"... Myers-Briggs, you're told, 'Hence, what you are.' What I like with CAM is it maps what an organization values," Raphaelian said.

"It also tells you what's the best thing for a person to do from an IS sense," he said.

HMO writes call center technology Rx

CONTINUED FROM PAGE 81

form consumer interactions into loyal relationships that can boost revenue or cut costs undertaken by a company that depends on telephone call centers to deliver not only customer support, but also levels of service that keep customers coming back.

By next spring, 90% of Kaiser Permanente's calls in the Cleveland area are expected to be answered in 10 seconds or less. The improvements result from a combination of call center process enhancements and an infusion of new technologies such as computer telephony integration (CTI), recommended by Technology Solutions Inc., a Chicago-based customer service consultancy that is run by former Kimberly Clark Corp. Chief Information Officer John Kohler.

QUICK RESPONSE

CTI is a technology that translates voice information from a telephone switch into computer data. These systems enable the computer systems that customer service representatives use to recognize a customer by name or Social Security number and then pop the client's full medical history on a representative's screen within seconds.

The use of technology in health care to improve customer service "has been atrocious," said Ron Zemke, president of

Performance Research Associates, Inc., a Minneapolis-based consultancy. With the exception of companies such as Kaiser Permanente and U.S. Healthcare, few health maintenance organizations are using CTI systems to collate their call center data with medical information, Zemke said. "You get the feeling they're all working with Apple II's," he added.

Lake Kaiser Permanent, Blue Cross of Washington, Alaska has sought stronger customer ties. In 1994, Technology Solutions also helped the health care provider reengineer what its customers wanted.

Back then, Blue Cross customers cared about things such as call-wait times and the amount of time it took to answer calls.

Much to its surprise, Technology Solutions survey of Blue Cross customers revealed that those issues didn't even make its members' Top 5 list. Instead, customers were more concerned about things such as first-call problem resolutions and having to repeat the same background information to customer representatives after being transferred, said Karen Vigil, president and chief operating officer at the Seattle-based firm.

"We didn't have sophisticated enough tools to capture that information ourselves," Vigil said.

Distributed

CONTINUED FROM PAGE 81

said the company's security model is to have centralized IT professionals develop security standards, then have business units implement them.

"But we go out periodically and survey these machines to make sure they have lived up to the standards," Combs added.

Security standards range from technical parameters, such as which protocols or services an Internet firewall should block, to policies such as scanning all diskettes for viruses.

Combs said AlliedSignal set up a companywide team of network administrators that includes people from central IS and the business units. Such teams are a good way to get user "buy-in" on security, he said.

That's the approach large organizations should take, said

Stephen T. Kent, chief scientist for security technology at BBN Corp. in Cambridge, Mass. "Then a certain distribution of security responsibility is appropriate," he said.

AUDIT TRAIN

Amoco Corp. sets security policy from within its 3,000-person centralized Information Technology Shared Services unit, and it dispatches auditors periodically to business units to check on compliance with those policies. But auditing is a labor-intensive that any one person or computer might get checked out only every other year, said Steve Ferguson, project manager of the Distributed Computing Initiative.

That means self-auditing by users is necessary, Ferguson said. "We try to get people to understand security is important," he said. "And we try to give them security tools that are not too onerous or too disruptive."

To remedy that, Blue Cross in March began to install a set of Windows NT 4.0 desktop machines that gather customer information through the company's telephone switch using a CTI middleware package called Prospect from Aspect Telecommunications Corp. in San Jose, Calif., said Brian Sassi, vice president of operations at Blue Cross of Washington/Alaska.

Efforts to use technology to improve call center efficiency extend to other industries.

CUTTING CALL TIME

For example, at Cincinnati-based Provident Bancorp, a \$3 million investment in an Oracle Corp. data warehouse and other systems that will be used to track the profitability of its customers is expected to help the bank shave eight to 10 seconds off each customer call when it goes live early next year. The average call time at Provident Bank is 2.5 minutes.

Although an extra 10 seconds doesn't seem like much on the surface, Provident hopes it can use that extra time and the customer information it can now more easily manipulate to cross-sell its Riverfront mutual funds and other products more effectively, said Duwayne Jarick, vice president of telemarketing services for the bank. Prudential holds \$6.3 billion in assets.

Sometimes users fall out of compliance with security standards through no fault of their own. For example, Ferguson said, screen savers that protected PCs by locking them up after a period of inactivity no longer work when users migrated from Windows 3.1 to Windows 95. Those little details need to be looked for in an audit, he said.

In a recent survey of 205 Fortune 1,000 companies, Research Room LLC in Baltimore found that 72% to 87% had security policies of various types, but the effectiveness of those policies was called into question by other survey findings.

Nearly half the companies said their networks had been penetrated by outsiders during the past 12 months, and 27% said they had no ability to detect unauthorized access to their systems. Of those suffering attacks, 58% said their systems had been penetrated more than 10 times.

Chase enhances 'net-based buying'

By Mitch Wagner

THE CHASE MANHATTAN Bank Corp. plans to add some meat to its plans to build systems so companies can buy office supplies, cleaning gear and other business supplies over the Internet.

Chase has announced a joint venture, called Intelisys Electronic Commerce LLC, with BVR LLC, a New York-based software company.

High-volume, low-cost business supplies make up 40% to 60% of business expenses, according to SupplyWorks, Inc., a Lexington, Mass., consultancy.

Meanwhile, Office Depot, Inc. said it is working on similar Internet technology and plans to make its services available to its business customers in January.

BVR already has technology for selling business supplies using electronic data interchange messages sent over encrypted Internet mail. The software uses a mix of World Wide Web technology and proprietary client applications; the new version will be entirely Web-based, with Java plug-ins that run on the client side.

BURSING FIELD

The Chase and Office Depot efforts are the latest developments in a trend of Fortune 1000 companies looking to cut costs by using the Internet to automate buying and selling of a kind of supplies known as maintenance, repair and operations (MRO) [CW, Nov. 11]. American Express Co. and IBM are also working on similar technology.

By automating the process, companies hope to cut down on paperwork. Also, by making it easy for employees to buy MRO supplies through approved channels, companies hope to cut down on purchases through unapproved, and more expensive, outlets.

"The goal here is to create an end-to-end process, from the employee's desktop through the supplier, that makes it easy to do the right things," said Scott LeForce, vice president of the electronic commerce group at Chase.

Bob Morawitz, a technical support specialist at Chrysler Corp., said Internet-based MRO purchases will be a benefit to the supplier as well. "It makes the customer captive to your selling by making it very easy and attractive to them."

In the pilot phase, which begins in January, Chase will locate the Web server on the supplier's premises. But in the second phase, which starts in the second quarter of next year, the server will be lo-

cated in a "demilitarized" zone inside the buyer's firewall but outside most of the company's network.

Security analyst Winn Schwartau, president of Interact, Inc. in Seminole, Fla., questioned whether the demili-

tarized zone concept will work. "It sounds like a poor man's excuse for multilevel security," Schwartau said. Using multilevel security, users put a sophisticated firewall in place and then control who has access to each individual server on

the network and what can be done with the data on those servers.

Intelisys is funded at less than \$1 million and by year's end will have 60 employees, about 13 of them from BVR. BVR now has about 27 employees.



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More than one master
 Your employees are working secret
 and jobs. What should you do?
 Don't ban it, manage it. Page 86

Managing

MARKETING hero

With Vince Barriero, front, in the IS driver's seat, online sales for The Sharper Image have more than doubled since he dramatically changed the company's Web site. That makes him a hero in the eyes of Joshua Tretakoff, rear, manager of alternative media.

Marketing needs speed, empathy and flexibility. Provide that and you can be a ...

TO BE LIKED IS GREAT; TO BE A HERO IS EVEN BETTER. But with some folks, it's tough getting on their good side, as many information systems people have found, especially when dealing with marketing types.

Not for Vince Barriero. "Vince is a hero," says Joshua Tretakoff, manager of alternative media at The Sharper Image in San Francisco, of his firm's senior vice president and chief information officer.

What makes Barriero a hero? For

Marketing hero, page 86

MARKETING the



CONTINUED FROM PAGE 85

one thing, he so dramatically changed the firm's World Wide Web site that online sales for the retailer of gifts and entertainment products more than doubled since the site was redesigned last spring, Tretakoff says.

He accomplished this partly by choosing Next Software, Inc.'s WebObjects software, which lets the company add products to the site quickly and at little cost. As a result, many new products were added.

When marketing suggested the site also be used by customers to get additional information, such as order tracking, and wanted to create software for it, Barrero convinced them otherwise. He pointed out that the direction marketing was going could be expensive and present security problems because customers would be looking inside the firm's internal computer system. He instead recommended a method for adapting the firm's self-service voice-response telephone model to the Web. "That saved us a hell of a lot of money and a lot of time," Tretakoff says.

What's Barrero's key to success with marketing? "I've learned what their business is," he says. "I'm kind of a bridge between the [marketing] business and the technical side."

CLEAR UNDERSTANDING

Perhaps no other part of an organization is more important for IS to understand than marketing. The reasons include the following:

- Marketing faces fast-changing targets and has to respond quicker than other functions.
- Marketing usually isn't technically oriented and is filled with creative types who tend to think differently than people in other departments.

Marketing rarely embraces technology enthusiastically. Marketing people "depend on the computer, but they don't want to have to understand all the details. [With] engineers, you bring a computer into their office, and before you turn around, they're into the config.sys file. They are much more self-sufficient. Marketing is much more dependent on us," says Kevin Barrero, senior information technology project manager at medical device maker Medtronic, Inc., in Minneapolis.

Marketing's creative bent can drive IT types to distraction. As Joe Hunter, manager of IS at Baltimore Gas & Electric Co. notes, "Sometimes we have to start [marketing projects without everything defined because everything has not been fully worked out. IT people usually like to have signed documents that have specifications

all worked out and have been agonized over for a long period of time and agreed to by both parties. But in the marketing arena, time is so short that being able to do that is not possible."

Dealing with the speed and uncertainty of marketing requires IS to be flexible and able to think fast. "The demand in the marketplace is a much faster shifting target [than in other corporate departments], so the approach in terms of IS supporting applications in marketing

really demands more of a rapid prototyping mentality," says consultant Blair Stephenson at Foreman/Stephenson & Associates in Irving, Texas.

HOW TO BECOME A HERO

Here is what IS managers can do to better serve marketing and become its hero:

- Don't force a square peg into a round hole. Accept the fact that marketing professionals often don't quite know what they are looking for. That's partly because they are creative and partly because markets change so rapidly that they are hard to grab hold of. "Give them the tools and training so they can pursue on their own what they want," says Richard Lennon, vice president and CIO at Brown-Foreman Corp. in Louisville, Ky.

Brown-Foreman, whose product line includes Jack Daniels bourbon, collects names of information from sources such as distributors, retailers, outside market research firms and industry associations and "allows [marketing] to drill down to find whatever it is that's bothering them," Lennon says.

- Because marketing wants to use technology more than understand it, go on your way to explain what you're doing and say, "Gary Hennerberg at Hennerberg Group, Inc., a marketing consultant in Plano, Texas, recommends IS generate copies of every report that applies to marketing. With each report, explain in detail what each header on a spreadsheet means in two or three sentences and the mathematical equation used to compute it, where the data comes from, how often the report is updated and who receives the report. And if the report is long, have a summary. Bind all these reports into a manual, and give it to marketing, along with an explanation of what you've done and why."

- When presenting information to marketing, use graphics, pie charts and color. Rows and rows of numbers usually don't compute with marketing folks.

"Marketing people are very visual," Hennerberg says. "Give them easy-to-use graphical interfaces." Lennon says, "Ease of use is enormously important because by and large, these people generally have not been close to the world of PCs."

• "Make a point of illustrating and talking up the functional utility of the information IS is providing without being patronizing," recommends Greg Hano, vice president and manager of marketing systems at First Chicago NBD Corp. Then "try to develop a hard [return on investment]," he says.

For example, Hano says IS can calculate the profits generated through the use of very targeted database information in a direct-mail campaign and compare it with a control group. Traditionally, he notes, marketing has relied on "soft dollars," which are claims that are or aren't associated with actual figures. This could involve saying certain ads are worth running even though specific profit figures are unattainable. You can become a hero by demonstrating marketing's ability to generate hard-dollar returns on investment.

• "IS people need to learn how to say no," Hano says. When you can't deliver, say so. Hennerberg suggests IS create a standard form that spells out how many man-hours a request from marketing will take and what's involved. Not being technically oriented, marketing often makes a request without realizing how time-consuming and costly the request is.

• Think like marketing folks. For example, if IS sees marketing has trouble tracking sales leads because an unacceptably high percentage of orders aren't being coded, it can help by redesigning the order-entry function, Hennerberg says. Instead of letting order-takers have an easy way out, the system can force them to put in some useful information, such as "unknown magazine," for a customer who now a company ad in a magazine but doesn't remember which magazine. This is better than just leaving the source of the lead totally uncredited.

• Be a hero to marketing. Marketing needs IS' support more than most departments.

IS has a lot of opportunity to be a hero to marketing. It's just a question of taking the time and initiative to implement these ways.

Howeverz is a freelance writer in Salt Lake City.

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**What should
you do when
your employees
moonlight?**

**Don't ban it,
manage it.**

Moonlighting is back. Are you prepared? Sure, there are those employees who possess enough excess energy — or creditors — to devote their nights and weekends to bringing in a few extra bucks. In fact, some IT managers say they've seen an upswing in moonlighting activities among their staffs in recent months. The reasons? First, a scarcity of workers with skills such as C++, SQL and Smalltalk means outside firms will pay exorbitant fees for moonlighters. And that's often a tempting proposition.

"Moonlighting is becoming a big deal for us because there's such a shortage of talent out there," says Gary Osborne, chief information officer at Hughes Space and Communications International, Inc., in El Segundo, Calif.

Then there's the lure of entrepreneurial life. IT managers say they see a tremendous upsurge in after-hours start-up technology projects, where employees often work for sweat equity rather than immediate pay. "People seem more motivated by the technical thrill — and the possibility of getting involved in the next Netscape — than by the extra paycheck," says Greg Netland, senior vice president of New Boston Systems in Tysons Corner, Va., an information technology consulting firm that also provides temporary workers to corporations. "Internet and [World Wide Web] Web businesses, in particular, are offering technologists enticing moonlighting opportunities, since the demand for knowledgeable people to design Web pages and otherwise develop online moneymaking ventures is escalating dramatically."

Most CIOs don't seem terribly concerned about moonlighting, but there is potential for abuse, says Susan Harrington, an associate professor at Georgia College & State University in Milledgeville, Ga. Harrington specializes in computer ethics issues.

SOME MANAGERS HAVE THIS ADVICE ABOUT HOW TO DEAL WITH MOONLIGHTING:

If you don't have an official policy, create one. Many companies have standard "noncompete" policies to keep employees from working for competitors. But you may want to establish IT-specific guidelines that detail such things as whether the employee must get permission from his manager, what type of outside technical work is out of bounds and cautions against abusing the privilege. The more precise you can be about the "gray areas," — for example, whether a company-provided laptop computer can be used for outside work — the better, Harrington says.

Don't be too rigid. Being too won't stop employees from moonlighting; it will only drive it underground, says Greg Robleski, who until recently was director of program management billing at Bell Atlantic Network Services, Inc. in Arlington, Va. Bell Atlantic requires that employees sign with Robleski calls a "weak" agreement not to work for any other long-distance carrier. But because of the tremendous demand for skilled teletechnicians, Robleski says his employees can easily find extra work at local financial institutions or nontelecommunications companies. And that's just fine with him. "If you make it just as much of a crime to work for Citibank as MCI, then your employees might actually be more tempted to go to the competition," he says. IT managers warn against any hint of a punishment reaction to a moonlighting request. The "if you've got time for that, you can take on some extra work" response will usually backfire, which will create a double-edged sword of hidden extracurricular activities. **Make the no-nos absolutely clear.** Even if you have a fairly liberal moonlighting policy, make sure your employees know what's off-limits. There's a good deal of consensus about what constitutes abuse, and IT managers say it's not unusual to have been forced to terminate "many people" who use company computers for outside jobs. In several cases, he says, he finds out about the abuse from other employees who are distressed by the ethical implications of what their colleagues are doing. Some firms regularly monitor server and mainframe session logs to spot unusual patterns. Netland recalls one programmer who created and sold screen savers of "questionable taste" on company time. The programmer was using the corporate voice- and electronic-mail systems to take orders. "Obviously, this was unacceptable," Netland says. He suggests that IT managers make it clear that telephone and online access logs will be checked periodically to forewarn such abusers.

Use the opportunity to track employee morale.

If a significant number of your employees are seeking permission to take on extra work, it's time for a reality check: Are your star technologists bored? "Face it, there's such a high demand for technical people [that] if you don't keep a dialogue going, you're at a severe disadvantage," Netland says.

LaPlante is a freelance writer in Woodside, Calif.

MORE than one MASTER

COMPUTERWORLD

Senior editor Alan E. Alter will facilitate a discussion this week on moonlighting among IT employees at www.computerworld.com.



Don't be too rigid with rules on moonlighting because it could hurt more than help.

— Greg Robleski, formerly of Bell Atlantic

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LEILANI ALLEN

WHEN YOU CAN'T GO BY THE BOOK ON CONDUCT



E

Business leaders' IT thinking

Deloitte & Touche LLP's most recent Survey of American Business Leaders asked 150 senior executives for their views on information technology. Here's our take on what the numbers mean:

f.y.i.

Many firms today have codes of behavior for managers and staff that enshrine core beliefs and serve as guides. There's certainly nothing wrong here. But what happens when the culture oper-

ates counter to the code? How can a manager be supportive of a corporate goal yet operate prudently in the real world?

The problem is especially acute for information systems managers because technologists tend to operate in a world of absolutes. In their off/on, black/white world, there is a tendency to stick to the letter of the law. Moreover, IS' unique role of supporting the entire organization provides IS staffers with opportunities to see even the highest levels of management in action.

The president of XYZ, Inc. felt there were several managers and executives in the firm achieving good results — but probably at the expense of their employees. Their hard-driving methods might ultimately backfire, leading to employee discontent or turnover. Therefore, he formulated a "Code of Conduct" for managers. This was explained in meetings with senior executives, who, in turn, were to carry the message down the ranks.

When the chief information officer shared the code with his managers, the

response was one of disbelief. They went through the list and found examples of contradictory behavior by various managers and executives. By making the code explicit, the behavior seemed even worse by contrast. IS staffers, who routinely complained about the behavior of users, now believed they had support from corporate managers to be judgmental.

Two points were particularly controversial. In the first instance, the code said home and family came before work. But in the event of an equipment installation, new software release or even a move, the user departments refused to stop work before 5 p.m. on Friday because this would impact their productivity, and they expected everything to be up and running first thing. Of course, this meant IS staffers would have to work nights and weekends to get the job done. What of the IT users, their families?

Another point concerned keeping commitments. System projects always had unchangeable deadlines, to which IS was held accountable. But the user de-

Hallelujah, they've seen the light. Information systems is an investment, say 83% of respondents, rather than a cost to be managed.

Get your act together, IS managers. The two greatest challenges when it comes to integrating technology companywide are prioritizing IT investments (68%) and making others in the organization understand value over the cost of building an IT infrastructure (59%).

Get those techno-creative juices flowing. Only 24% of respondents gave their companies a high rating for technological innovation.

Hang on to your network wizards. Between 50% and 60% of respondents say a company intranet, the Internet, electronic mail and a "knowledge-based information network" will be dominant technologies in their corporate environment until the turn of the century.

They take training seriously. Sixty percent of executives say their companies are investing heavily in retraining 15% personnel in new computer platforms, such as the Internet or client/server computing.

Bone up on knowledge management. Fifty-two percent say a "knowledge-based information network" will be a dominant IT application in their company through the rest of the decade. In the new millennium, 63% say these repositories of best practices, ideas, knowledge about customers and useful information will become more important. But only 29% now say they use IT to create and share knowledge.

IT and globalization go together. Technology is the primary driver of corporate decision-making on globalization. The ability to use IT to support a global business and compete worldwide has become more important than beating the competi-

partment was frequently late in defining requirements or approving designs. Yet the date wasn't adjusted. In other words, IS was expected to keep its commitments, but others could break theirs with impunity.

The CEO was at a loss. If he obeyed the corporate mandate and apprised his staff of the code, dissatisfaction could become more widespread. It was difficult enough to help achieve a measure of corporate loyalty among a highly mobile workforce. Would this undermine the effort? On the other hand, if he and his department refused to perform as they traditionally had, his peers' reactions were likely to be negative.

Judgment Call. The CEO chose to downplay the code and advised his staff to view it as a noble experiment that might someday have an impact on the culture. In the meantime, they would have to keep up the traditional levels of performance.

Change has to start somewhere, and executives and management gurus would agree that it has to start at the top. But high-sounding principles aren't enough. The message has to be interpreted in terms of real-life behaviors that people can immediately apply to their own circumstances. And most important of all, employees have to see executives adopting these same beliefs and setting examples.

Allen's column deals with the kinds of people issues managers face every day but are reluctant to discuss openly. Each column is based on a real-life situation. The names and certain circumstances are changed to protect confidentiality. Allen, a director at Temex, a management consulting firm in Burlington, Mass., invites readers to share experiences with her via E-mail at allen@temex.com.

sition and the economy.

PC troubleshooting no more. Ninety-three percent of respondents have a PC on their desks.

—Allan E. Alter

(The fine print: 65% of respondents represent companies with revenue that ranges from \$1.1 billion to more than \$4 billion. Respondent breakdown: 25% are CEOs, chief operating officers, chief financial officers, chairmen or presidents; 29% are vice presidents or directors. Industry breakdown: manufacturing, 26%; service industry, 18%; wholesale/retail/trade and other industries, 16%.)

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Buyer's Guide

DECISION-SUPPORT TOOLS

To narrow your search for decision-support tools, start by identifying which level of tools you need

The market for decision-support tools is evolving at a dizzying pace. Innovative tools hit the market each month, and existing products are transforming themselves faster than Madonna. Each tool was designed to help end users drill in to corporate databases to collect data and view it from the various angles needed to answer business questions.

Expect a market shakeout in the next two years in which the winners swallow up niche products to offer versatile, multipurpose tool sets that support an array of decision-support operations. A key differentiator among tools will be their ability to support high-performance, interactive queries across the World Wide Web.

There are five categories of decision-support tools, although the lines that separate them are quickly blurring. What follows is a look at those categories and a sampling of some of the key players in each:

- **Reporting**
- **Managed query**
- **Executive information systems**
- **Online analytical processing**
(See OLAP tools review, page 101.)
- **Data mining**

Drilling for data, page 96

By Wayne W. Eckerson



DRILLING DATA

Drilling Down DATA

CONTINUED FROM PAGE 95

Reporting tools can be divided into production reporting tools and decision-reporting tools. Production reporting tools let companies generate regular reports or support high-volume batch jobs, such as calculating and printing paychecks. Production reporting tools include third-generation languages such as Cobol, specialized fourth-generation languages such as Information Builders Inc.'s Focus, and high-end client/server tools, such as MITTS's SQR.

Report writers, on the other hand, are inexpensive desktop tools designed for end users. Products such as Segrate Software's Crystal Reports let users design and run reports without having to rely on the IT department.

In general, report writers have graphical interfaces and built-in charting functions. They can pull data from a variety of data sources and integrate them in a single report. Leading report writers include Crystal Reports, Actuate Software Corp.'s Active Reporting System, IQ Corp.'s IQ Report, IQ Objects and Platinum Technology Inc.'s InfoReports.

Vendors are trying to increase the scalability of report writers by supporting three-tier architectures in which report processing is done on a Windows NT or Unix server.

Report writers also are beginning to offer object-oriented interfaces for designing and manipulating reports and modules for performing ad hoc queries and online analytical processing (OLAP) analysis.

Manged query tools shield end users from the complexities of SQL and database structures by inserting a meta layer between users and the database. Meta is a layer of software that provides subject-oriented views of a database and supports point-and-click creation of SQL. Some vendors, such as Business Objects Inc., call this layer a "universe." Other vendors, such as Oracle Corp., call it a "catalog." Managed query tools have been extremely popular because they make it possible for knowledge workers to access corporate data without 15 intervention.

Most managed query tools have embraced three-tier architectures to improve scalability. They support asynchronous query execution and integrate with Web servers. Managed query tools vendors also are racing to embed support for OLAP and data mining features.

Some tool makers, such as Business

Objects, take an all-in-one approach. It embeds OLAP functionality in its catalog product. Other vendors, such as Cognos, Platinum Technologies and Information Builders take a best-of-breed approach, offering Microsoft Corp. Office-like suites composed of managed query, OLAP and data mining tools.

Other leading managed query tools are IQ Software's IQ Objects, Andyne Computing Inc.'s CQL, IBM's Decision Server, Software Corp.'s Express (formerly sold by Software AG) and Oracle Corp.'s Discoverer 2000.

DATA MINING

Electronic information systems (EIS) tools generate reports automatically and manage query tools. They were first deployed on mainframes. EIS tools allow developers to build customized, graphical decision-support applications—in "briefing books"—that give managers and executives a high-level view of the business and access to external sources, such as customs, online news feeds. EIS applications highlight exceptions to normal business activity or rules

OLAP tools provide an intuitive way to view corporate data along common business subjects or dimensions and then let users navigate through the hierarchies and dimensions with the click of a mouse button. Users can drill down, across or up levels in each dimension of pivot and swap our dimensions to change their view of the data.

Some tools, such as Arbor Software Corp.'s Express and Oracle's Express, preaggregate data in special multidimensional databases.

Other tools work directly against relational databases and aggregate data on the fly, such as MicroStrategy Inc.'s DSS Agent or Information Advantage Inc.'s Decision. Some tools process OLAP data at the desktop instead of a server. Desktop OLAP tools include Cognos' Power Play, Büro Technologies' Cognos PowerPlay, Planix Systems Inc.'s Gemini and Andyne's Pibus.

Many of the differences between EIS and OLAP tools are fading. Vendors are rechristening their products to give users greater control over the tradeoff between

sizes that perform simple OLAP functions, such as rank sorts and moving averages. Red Brick Warehouse 5.0 also supports data mining algorithms.

DATA MINING

Data mining tools are becoming hot commodities because they provide insights into corporate data that aren't easily discerned with managed query or OLAP tools. Data mining tools use a variety of statistical algorithms to analyze the correlation of variables in the data and ferret out interesting patterns and relationships to investigate.

Traditional data mining tools, such as IBM's Intelligent Miner, are expensive and require statistics to implement and manage. But there is a tool emerging that promises to take the mystery out of data mining. These tools use a Data Mind Corp.'s DataMind. Pilot's Discovery Server and soon-to-be shipped tools.

Business Objects and SAS Institute Inc. have tools offer simpler user interfaces that plug in directly to existing OLAP tools or databases and can be run directly against data warehouses.

User	Activity	Tools
Clerk	Simple Retrieval	4GL
Executive	Exception reports	EIS
Manager	Simple analysis	Managed query OLAP
Business analyst	Complex analysis	Spreadsheets, data mining

by using color-coded graphics.

Popular EIS tools include Pilot Software Inc.'s Lightship, Platinum Technologies' Forest and Trees, Comshare Inc.'s Commander Decision, Oracle's Express Analyzer and SAS Institute Inc.'s SAS/EIS.

EIS vendors are moving in two directions. Many are adding managed query functions to compete head-on with other decision-support tools. Others are building packaged applications that address horizontal functions, such as sales, budgeting and marketing, or vertical industries, such as financial services. For example, Platinum recently announced RedRisk, a decision-support application for the insurance industry that was built with Forest and Trees. Comshare provides the Arthur family of supply chain applications for the retail industry.

flexibility and performance that is inherent in OLAP tools. For example, these hybrid OLAP products can store data in a specialized OLAP database or a relational one. And they can aggregate data on the fly or precalculate dimensions to improve query performance. Expect many OLAP vendors to rewrite pieces of their products in Java next year.

Database vendors eventually might be the largest OLAP providers. The leading database vendors plan to incorporate OLAP functionality in their database engines. Oracle, Informix Software Inc. and, most recently, Microsoft have taken the first step toward this end by acquiring OLAP vendors (RI Software, Stanford Technology Group and Panorama, respectively).

Red Brick Systems' Red Brick Warehouse has always supported SQL exten-

SUMMARY

There are dozens of decision-support tools on the market, in several categories. Ironically, as the sophistication of decision-support tools grows, the most widely deployed tools continue to be spreadsheets and Microsoft Access, followed closely by Microsoft Visual Basic and Sybase Inc.'s PowerBuilder applications, according to industry surveys.

When analyzing complex data, simplicity and familiarity are sometimes the greatest virtues.

Eckerson is editor in chief of open information systems, senior consultant and manager of Patricia Seybold Group's business intelligence and data warehousing service. His address is wayne@psgroup.com.

DRILLING DATA

CONTINUED FROM PAGE 95

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EXECUTIVE INFORMATION SYSTEMS

Executive information systems (EIS) tools predate report writers and managed query tools; they were first deployed on mainframes. EIS tools allow developers to build customized graphical decision-support applications — or "briefing books" — that give managers and executives a high-level view of the business and access to external sources, such as custom, online news feeds. EIS applications highlight exceptions to normal business activity or rules

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There are two types of data mining tools, such as IBM's Intelligent Miner, are expensive and require statistical expertise to implement and manage. But there is a new category that promises to take the mystery out of data mining. These tools include Data Mind Corp.'s DataMind, Pilot's Discovery Server and soon-to-be shipped tools from Business Objects and SAS Institute. These tools offer simple user interfaces, that plug in directly to existing OLAP tools or databases and can be run directly against data warehouses.

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Edmund is editor in chief of open information systems, senior consultant and manager of Patricia Seybold Group's business intelligence and data warehousing service. His address is ewayne@psegroup.com.

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PRODUCT REVIEWS

**By Garrett
Michael Hayes**

**THE COMMON
THREAD IS THAT
OLAP TOOLS
DRAIN TOO MUCH
TIME AND ENERGY
BEFORE YOU GET
WHAT YOU NEED.**

"Business information from a business perspective" is the mantra for vendors in today's online analytical processing (OLAP) market. Their tools are meant to drill into databases to extract business information by reorganizing data relationships and offering users a variety of data views. The problem is, those tools continue to require a hefty investment of time and energy.

Our review of four OLAP tools shows that the task of making OLAP usable still bears a fairly high "eff quotient," the elves being the information systems professionals who are needed behind the scenes.

To get a sense of the OLAP marketplace, we looked at OLAP tools from four vendors: Andysne Computing Inc.'s Pablo; Brío Technology Inc.'s BríoQuery; Cognos Corp.'s PowerPlay; and IQ Software Corp.'s IQ/Vision. Business Obj-

ects, Inc. declined an invitation to submit its BusinessObjects product for review. The products were chosen as significant market players by industry analysts.

Each of the vendors also publishes a query and reporting tool, except for Brío, which markets its product as an integrated query/OLAP tool. We didn't examine those query and reporting tools in depth.

TEST ENVIRONMENT

We tested the tools on multiple Dell Computer Corp. OptiFlex GL5166 PCs running Windows NT Workstation 3.51. The PCs were configured with 32M bytes of memory, 2G-byte hard disks and a 3Com Corp. 10/100M bit/sec Ethernet adapter in a switched Ethernet network. We also tested the query function of BríoQuery using an SQL 6.5 database containing the data set for a standard TPC-D style benchmark.

Two staff members worked with each product, viewing sample data sets, testing the ease with which data manipulation was accomplished, evaluating the range of graphics and composing analytical reports.

MULTIPLE USER AUDIENCES

There are essentially three categories of

OLAP tool users, ranging from the dedicated to the casual. At one end of the spectrum is the dedicated analyst, who does nothing but analyze data every day. That is usually a person with good technical skills and a strong grasp of database concepts. At the other end of the spectrum is the casual user who simply needs to see the results of an analysis and a few variations. That person is likely to lack either the time or the skill to perform complex analysis tasks. Many users fall between the two extremes in terms of frequency of use and their expertise.

The vendors took different approaches to serving the needs of the various users. BríoQuery is marketed in three versions, designated for Designers, Explorers or Navigators. IQ/Vision delivers a single package that can be operated in various modes, including Developer, User or Briefing. Neither PowerPlay nor Pablo appears to make a formal distinction among the types of users.

END-USER DOCUMENTATION

One key element in making an OLAP tool useful is making certain that the user can understand and operate it correctly. Because of this, end-user documentation and especially tutorials are critical.

Product reviews, page 103



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PRODUCT REVIEWS

CONTINUED FROM PAGE 101

It's easy to assume that a businessperson will intuitively understand a properly designed business metaphor, and all of the vendors appear to make that assumption to some degree. But there are all sorts of business environments, and the vendors need to better address that in their documentation and sample data. For example, one of our testers — with a manufacturing background — was frustrated by the repetitive use of sales and marketing models in the sample databases.

Of the four products, PowerPlay had the best tutorial. Discovering PowerPlay was a separate booklet that had a clear, easy-to-follow layout. The sample tasks rapidly familiarized the reader with concepts such as "drilling" and "milling."

Pablo also had a fairly good tutorial, with a good set of definitions at the front for those new to the OLAP world. Although individual tasks were clearly defined in the tutorial, it was difficult for users to get a sense of what was being accomplished with each task.

The tutorial for IQ/Vision was good, but a trifle busy. It was organized more along the lines of a reference manual than a step-by-step tutorial but still carried a user along fairly well.

Unfortunately, Brio chose to embed the tutorial material for BioQuery in the primary reference



manual, limiting its usability. A user needs to already be familiar with some of the fundamental concepts of querying and analysis to know what to look for.

USER INTERFACE

The user interfaces were remarkably similar among the four products, which is not surprising, given that all are Windows implementations and all are intended to do cross-tabular and graphical presentation of numeric information.

BrioQuery presented a nice visual metaphor for moving data headings from top to side or vice versa, using a small, pivoting line. It also provides a handy "Advisor" window, which gives tips on how to use each screen as you come to it. Unfortunately, on the screens for building data queries, it was far too easy to hide one window with another.

Our testers agreed that PowerPlay presented the most straightforward user interface. It took only a few moments to understand how to use the appropriate boxes to select the dimension to be viewed or to move dimensions in and out of the headers and rows for an analysis.

The use of mouse controls in IQ/Vision was slightly confusing. Some controls that we thought to be

Product reviews, page 105

PRODUCTS at a GLANCE

BRIEFING GUIDE

PABLO

Andysne Computing Ltd.
Kingston, Ontario

www.andysne.ca

A confusing interface left Pablo at the back of the pack.

BIOQUERY

Brio Technology, Inc.
Montgomery, Calif.

www.briotech.com

BioQuery delivers good analytic capabilities, combined with powerful but horrendous query capabilities.

POWERPLAY

Cognos Corp.
Burlington, Mass.

www.cognos.com

PowerPlay presents the clearest user interface of the group. The analytical user will be viewing data about very rapidly.

IQ/VISION

IQ Software Corp.
Norcross, Ga.

www.iqpc.com

IQ/Vision has powerful reporting tools and a wide range of graphics. Briefing books are an ideal tool for presenting results to time-pressed senior managers.



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PRODUCT REVIEWS

CONTINUED FROM PAGE 103

single-click buttons required double clicks, and in one case we tried to drop an item into a chart header and moved it to the rows of a chart instead. The familiar "tool-tips" found in most Windows programs seemed to be there for some of the controls and not for others. But IQ/Vision presented the widest range of graphic formats.

Both testers agreed that the interface in Pablo was the least clear of the lot. Controls for tasks such as selecting the dimensions for an analysis were hard to identify.

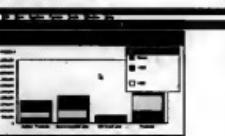
Also, the window as presented on start-up was sized in a way that several dimensions were hidden from view, causing serious confusion.

DEPTH AND BREADTH

One of the most significant differences between OLAP tools and query/reporting programs is the source from which the data is retrieved. Although query tools generally operate by extracting data from a traditional database engine such as Oracle Corp.'s Oracle or Microsoft



rely on separate aggregation tools to create the hypercubes. The hypercubes may reside on the local workstation or on a server, depending on the cube-building tool used.



Cognos' PowerPlay scores well with its user interface

Corp.'s SQL Server, OLAP tools rely on a "hypercube." The term refers to the fact that the data is stored and referenced according to several "dimensions." Hypercubes generally consist of data that has been aggregated in advance from the detailed data. They are optimized to allow the data to be rapidly rearranged from multiple perspectives. But they also limit the granularity with which the data may be viewed. For example, a hypercube built from a sales database might contain revenue figures for products down to the location from which the product was sold but not have information about which customer purchased which product.

BrioQuery combines the query and OLAP functions in a single tool, building commonly small hypercubes on demand from queries that may be defined by the end user or by a systems administrator. PowerPlay, IQ/Vision and Pablo

The use of hypercubes for OLAP has important implications for the speed and consistency with which data can be manipulated. By defining the manipulations on what is essentially prefigured data, users can be returned to the user quickly. However, there are limits on the types and

amounts of information made available that way. As in the sales example cited above, a user who needs more detail than the cube was designed to contain still needs to resort to a query tool rather than an OLAP tool.

The alternative is to allow users to extract information directly from the detailed database, as BrioQuery does.

This introduces problems with data consistency and added system load. Though we didn't encounter it in our testing, it's possible for users creating hypercubes from the same original data to frame their queries with slight differences and thus retrieve subtly different result sets. As the number of direct query users increases, the load on the system increases more rapidly than it does for analysis of an existing hypercube.

There's also the risk of simple overload from ill-formed queries. While attempting to specify a data filter for a query in BrioQuery, we failed to see the

Product review, page 107



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PRODUCT REVIEWS

CONTINUED FROM PAGE 102

possible values for a field, only to learn that we had inadvertently set off the retrieval of an entire 60-million record table. The discovery that there wasn't a way to cancel our request would have been extremely disheartening in a production environment.

MAPPING DETAILED DATA TO "BUSINESS DIMENSIONS"

The quality of the information available in a hypercube depends heavily on either the information technology person's understanding of the business need or the businessperson's understanding of the IT implementation. The currency of the information depends on how and when aggregation is performed.

The amount of detail and the type of information in a given hypercube is limited to what has been planned.

If the person designing the hypercube doesn't anticipate a need for a particular value, it won't be available for OLAP analysis even though it exists in the database. Also, the data available in the hypercube

is only as current as the most recent time the aggregation process was run. The tutorial manual for Pablo refers to IS summing information to the hypercube "monthly." That hardly lends itself to effective day-to-day analysis tasks.

Allowing direct user access to detailed data also has its drawbacks. The user must have an intimate knowledge of the database structure. Dealing with obscure field names remains a challenge for end users.

In all, the case for using hypercubes maintained by IS is fairly compelling. But it's important to remember that the design of the hypercube is a business function far more than it is a data pro-

cessing function.

Business-knowledgeable IS staff or technically inclined businesspeople need to be involved with tasks such as setting up the definitions for the hypercubes and adjusting the definitions as business

critical data, while the query capabilities may be used to give access to more detailed data without as much up-front IS intervention.

For bigger installations that have large amounts of detailed data and busy networks, the use of preaggregated data cubes is almost essential. The choice of OLAP tool in such an environment may be driven more by user community and its tastes than technical considerations.

For the high-level executive who wants only an analytic summary, the IQ/Vision concept of a "briefing book" is well-targeted, but presupposes either an IS worker or a fairly sophisticated end user to build those briefing books. The likelihood to highly sophisticated user is likely to be pleased with either IQ/Vision or PowerPlay, with IQ/Vision taking the slight lead if the user likes to analyze with graphics.

Hayes is system controls manager at Client/Server Labs (www.csclabs.com) in Atlanta, a primary test lab partner for Computerworld.

On-screen help from Brio's Advisor comes in handy

needs change.

For smaller shops, where IS staff and data stores are more limited, the use of a combined query and OLAP tool may make the most sense, even given its hazards. Preaggregation tools may be used to create hypercubes for highly



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Computerworld Editorial Calendar

January - June, 1997

Issue Dates	Ad Closing Dates	Editorial Features	Show Distribution & Ad Readership Study issues
Jan. 2	Dec. 6	Annual Forecast Issue Annual IS Jobs Forecast	
Jan. 6	Dec. 20	Close Look: Melding the browser into the desktop	
Jan. 13	Dec. 27	Buyer's Guide: Web commerce servers	
Jan. 20	Jan. 3	Close Look: HTML development tools Managing: Project management +IS Leadership Series	
Jan. 27	Jan. 10	Buyer's Guide: Network management suites +Intranet Monthly	
Feb. 3	Jan. 17	Customer Satisfaction Quarterly: Managers rate their networking vendors +Computerworld Financial Services Journal, +Computerworld Retail Journal	ComNet Washington D.C. 2/3 - 2/6 Search Study
Feb. 10	Jan. 24	Special Feature (Managing, In Depth, Guide): Computer Security Close Look: Risk management systems in the financial sector	
Feb. 17	Jan. 31	Buyer's Guide: Unix RAID devices +IS Leadership Series +Computerworld Healthcare Journal, +Computerworld Telecom Journal	
Feb. 24	Feb. 7	Buyer's Guide: PC-based videoconferencing systems +Annual Premier 100 magazine +Intranet Monthly	
March 3	Feb. 14	Close Look: Web usage tracking tools +100 Hot Emerging Companies magazine	
March 10	Feb. 21	Buyer's Guide: Massively parallel servers +Global Innovators quarterly supplement	
March 17	March 28	Close Look: Web-oriented peripherals +IS Leadership Series	
March 24	March 7	Buyer's Guide: Enterprise application development tools +Intranet Monthly	
March 31	March 14	Careers: IS staff training survey - the companies that do it best Close Look: The scalability of data warehouse products	

Display Advertising

Black-and-White Display Ads: Friday (5 pm EDT or EST) 10 calendar days prior to issue date.
Color, Inserts, Premium Positions, and Special Feature Sections: Friday (5 pm EDT or EST) 17 calendar days prior to issue date.

Marketplace Advertising

Closing date for Marketplace advertising in each weekly issue is Monday (5 pm EDT or EST) prior to each following Monday issue.

Recruitment Advertising

Closing date for recruitment advertising in each weekly issue is Thursday (3 pm EDT or EST) prior to each Monday issue.

Industry Journals

Closing dates for advertising in Computerworld Industry Journals are different from those of the weekly Computerworld issues. Please consult your Computerworld sales representative for more information.

Issue Dates	Ad Closing Color* B&W	Editorial Features	Show Distribution & Ad Readership Study Issues
April 7	March 21	Buyer's Guide: Componentized browser plug-ins •Computerworld Financial Services Journal, •Computerworld Retail Journal •Campus II magazine (actual issue date TBA)	
April 14	March 28	Managing: Technology for customer intimacy Closer Look: Intel workstations vs. UNIX	
April 21	April 4	Customer Satisfaction Quarterly: Managers rate their software vendors •IS Leadership Series •Computerworld Healthcare Journal, •Computerworld Telecom Journal	
April 28	April 11	Closer Look: Sonet update •Intranet Monthly	
May 5	April 18	Buyer's Guide: Remote Access Servers Managing: Year 2000	Networld + Interop: Las Vegas, 5/5 - 5/9 Search Study
May 12	April 25	Special Feature (Managing, In Depth, Guide): Object technology in the corporation	
May 19	May 2	Buyer's Guide: Enterprise DBMS •IS Leadership Series	
May 26	May 9	Careers: Annual Job Satisfaction Survey Closer Look: Beyond Visual GLS •Intranet Monthly	
June 2	May 16	Buyer's Guide: Web development packages •Best Places to Work magazine •Computerworld Financial Services Journal, •Computerworld Retail Journal	Comdex Spring/ Windows World: Atlanta, 6/2 - 6/5
June 9	May 23	Managing: Redesigning the IS organization Closer Look: RMON - Product comparison and who's using it •Global innovators quarterly supplement	
June 16	May 30	Buyer's Guide: Pentium Pro Servers •IS Leadership Series •Computerworld Healthcare Journal, •Computerworld Telecom Journal	PC Expo: New York 6/17 - 6/19 Search Study
June 23	June 6	Closer Look: Internet Email Software •Intranet Monthly	
June 30	June 13	Buyer's Guide: PDAs	

Editorial Contacts (508) 879-0700: Annual Forecast Issue – Steve Ulfielden;
Close Look – Kevin Fogarty; Buyers Guide – James Connolly; Managing, Leadership Series – Allan Alter;
Electronic Commerce Journal, Premier 100, Industry Journals – Alan Alper;
Campus Edition, Best Places to Work – Joyce Chuchian; Internet Series – Ann McCrorey

* Includes ads within special editorial features and premium positions.

In Depth

The sci-fi author talks about the shrinking technology world and the billionaire model for his new novel's archvillain (you'll never guess . . .)



MARK KLINE

TAD WILLIAMS

CONTINUED FROM PAGE 3

business in society, how the wealthy and powerful affect the lives of ordinary people and the interaction between the developed world and developing countries.

Williams discussed these themes with his friend Mitch Wagner, *Computerworld's* senior editor, Internet, at an interview in Williams' home recently.

One subject discussed was the uncanny resemblance between an *Otherland* villain and a certain real-life computer mogul in Redmond, Wash.

CW: One of the villains in your novel seems strangely familiar. It's 70 or 80 years in the future, the guy is 110 years old...

WILLIAMS: You noticed that, huh?

• Bill Gates is made one of the arch-villains, one of the industrial castel who are essentially out to rule the world — or do something worse: we don't quite know what they're trying to do at that point in the books. [Otherland is the first book in a planned four-volume series.]

Do I have something against Bill Gates? No. In a lot of ways, I like Bill Gates. I admire what he's done with the field. He has become such an icon, though, that if I felt it was going to pick a character that would make alusions to somebody alive today, that was the obvious one.

Also, it amazed me to think about someone who's so youthful — "The Thirtysomething Billionaire" — when he first made his pile-of-money — to think about what this guy would be like when he's 110, when his chief feature is not his youth anymore but his great age.

I think if Bill Gates knew that this character was modeled in part on him, he would think it was humorous. I'm sure Microsoft employees will be amused by it. (Laughs.) Of course, if the black-hag team from Microsoft shows up at the front door in matte-black Baksics in the middle of the night, I'll know how he feels about it.

CW: One of the big topics in this book is virtual reality. Will people actually do what goes on in *Otherland*? For instance, will

they immerse themselves in these virtual worlds as they do in your book, in William Gibson's novel *Neuromancer* and in other works?

WILLIAMS: Yes. The way these things make their way into our lives is through entertainment. The best example is television, which almost everybody has for entertainment value. Watching baseball games, seeing Milton Berle — that's what got television into people's homes.

But it's become a far more profound influence on our lives. What people see on television is now so much more important than newspaper news or radio news. The single most important way people visualize the universe they live in is by means of what is filtered through television.

CW: What about the social and political setting for the novel? This is a future where entertainment and computer technology are advanced as far as we can dream today, but the rest of the world is pretty well going to hell. And business seems to be in large part to blame. Am I getting the right sense of what you wrote?

WILLIAMS: No. I certainly am not a Luddite. I don't think there's an insinuation that business is to blame for the state of the world. As a matter of fact, in many ways, I set out very deliberately ... not to write a Utopia, but not to write a dystopia, either.

I think the world of this future is pretty similar to what we're in right now.

People who can afford to be are still safe and healthy and happy; people who can't afford to be are miserable and starving, as they are now. There's still violence.

What there is that's slightly different is that I'm trying to reflect the post-Eastern Bloc world. There's much less resistance to organized, semi-democratic capitalism. The world is going through a "Hegelian moment" or "Strategic transition" to get it in a catchphrases. As a result, business is less regulated than it might have been 50 years ago or even a year ago.

It's a world where making money is the goal of most people, and there are very few checks and balances. In the book, government is getting more fragmented. That's the problem: there's very little way for people to organize against the bad stuff that happens when making money and private well-being is the highest good.

I hope that this is not exactly how things will work. I hope we try to solve these problems instead of ignoring them in pursuit of our own personal security, which is the panicky mode everyone seems to be in in the '90s.

CW: One of the things you deal with in the book is the effect of technology on the Third World. Many of our readers are employees of international corporations, so they are near the front line on this issue. Any thoughts on that?

WILLIAMS: That's actually where this book came from. For a long time, we have had a traditional north/south split in the real world. We have the northern industrialized nations and, radiating out from them, military might and a search for raw materials and cheap labor and so on.

The southern part of the globe has traditionally been on the receiving end. Therefore, they have been subjugated, they have given up aspects of their culture, they have allowed aspects of their culture to be co-opted and taken back to the north and so on.

So when I was first starting these books, I was thinking what the continuation of that will be in the digital era, in the Information Age.

We've got their cultural artifacts, and they've got ours, and it's this ongoing process. Who is changed more, and who is changed for the worst is a subtheme of the book.

CW: Even programming jobs are going abroad. Is that just the beginning?

WILLIAMS: Even in that case there is not much change yet. A job going there, A pipeline goes with it, a lot of staff goes over that pipeline; it changes the place where that pipe jumps out, metaphorically speaking.

If you send programming jobs to India, you are putting people in India in contact with a large American industrial entity ... [You're] connecting them through payroll, through information exchange, through E-mail, through everything else you can name, to an organization that is not a native, local thing.

Otherland

DAW Books,

Inc., New

York: 1996;

770 pages;

\$24.95.

hardcover.

It's going to change those lives. It is, in the long run, going to be an outward spreading of our culture — as the more voracious culture — as opposed to an inward spreading of the Indian culture. Indian culture won't come to us as much as we will go to them to change them.

Where we absorb little bits of these things, what do we absorb? We absorb the Macarena as a huge dance craze. The two guys who did that song live in a small town of about 5,000 people in Spain. Where is the impact greater?

America has much more capacity for absorbing things and making them meaningless. Whereas when America sneezes, large amounts of the Third World catch cold.

Wagner's E-mail address is mitch_wagner@comcast.net.

IT Careers

MAKE YOUR MOVE

By Jill Vitiello

CURT VINCENT, Regional manager
Pencom Systems Administration
Austin, Texas

put down new roots for an attractive IS job offer? Advice of those who have gone before.

NEARLY one in five Americans moves each year, making ours the most mobile society on Earth, according to the U.S. Census Bureau. Relocation has been a part of information systems life since the days when IBM employees joked that the company's acronym stood for "I've Been Moved."

Frequent transfers were once required to rise through the ranks. Nowadays, IS professionals set their own agendas for relocation. Greater career opportunities, lower cost of living, better quality of life and being near family are just some of the reasons people pull up stakes. On the other side of the coin, IS managers with plenty of jobs to fill know their companies can entice the best IS pros only with competitive packages that include paying for relocation.

On these pages, meet six professionals who pulled up stakes and put down roots in new cities. Find out from them how to make all the right moves—and learn from their experiences how to make your move just right, too. The following are a sampling of their experiences:

All the right moves

"Plug into Yahoo or another search engine and check out local [real estate agents] online. You'll see photographs of homes and neighborhoods, plus specs and prices. You'll

get to know the best parts of town, which will focus your house-hunting efforts when you visit the city."

With 22 moves in 20 years, Curt Vincent is an expert at relocating.

Most of those moves were made while he served in the U.S. Army as a communications officer. General Dynamics Corp. lured Vincent to Wall Street where, as vice president, he built a worldwide distributed trading system.

When Pencom Systems Inc. approached the IS veteran in 1994 to start up a new business venture for the company in the Southwest, he jumped at the chance. Vincent stayed in New York for two years and helped establish Pencom Systems Administration at corporate headquarters. On July 4, he and his family moved to Austin, where he launched the PSA division.

"I wanted to get to a place with culture, technology and fresh air," Vincent says. "Austin is known as Silicon Gulch because there are so many technology companies here. And even when I work until 10 at night, I'm home by 10:15."

Pencom paid for nearly all the costs of his relo-

cation from a New Jersey suburb to Texas. Vincent says. But he warns that some relocation costs, such as shipping a car and hotel accommodations, are taxable, and many companies don't reimburse employees for those extra tax expenses.

Vincent advises that IS employees who are considering a move to another state or region search for as much online information as possible on their potential employer and new home city or state. Also, read the real estate pages and the classified ads in the target city's Sunday newspaper. He suggests getting in touch with the local Chamber of Commerce for current information on the community.

Following the family

TIP: "Review the corporate relocation package thoroughly. Ask questions until you understand the answers. Use the resources the company provides."

APPROVED BY CURT
VINCENT, REGIONAL
MANAGER, PENCOM
SYSTEMS ADMINISTRATION,
AUSTIN, TEXAS

This summer, D'Ercole and his wife, who is a programmer, sold their home in Westchester County, New York, left their jobs in Manhattan and relocated to Jacksonville. He answered an ad and wound up not only with a job offer, but also

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E. Dir. Mkt. Sys. Development, Systems Architecture

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Tech. Management
33. Sys. Integrators/Value/Consulting Mgr.
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38. Marketing, Product Management
39. Sales & Mkt. Management
40. Medical, Legal, Accounting Mgr.
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43. Other/Titled Personnel

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C. Office
D. Windows NT
E. DOS
F. Macintosh
G. Unix
H. NetWare
I. App. Development (Database) J. User Software
J. Business/Financial Products
K. Manufacturing/Production
L. Internet Products
M. Other _____
4. When do you buy computer software products
A. Do you buy, regularly, recommend or approve the purchase of?
1. Once a month
2. Once a year
3. Once every few years
4. Never
B. Do you buy, regularly, recommend or approve the purchase of?
1. Once a month
2. Once a year
3. Once every few years
4. Never
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L. Systems Integrators, VPs/Asst. Computer Services Business, Software Planning & Consulting Services

10. Computer/Peripherals: Dealer/Out/Petrol.
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37. Sales & Mkt. Management
38. Marketing, Product Management
39. Sales & Mkt. Management
40. Medical, Legal, Accounting Mgr.
OTHER PROFESSIONALS, ADMINISTRATIVE
41. Admin. Manager, Executive Secretary
42. Educator, Journalist, Student
43. Other/Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase? (Circle all that apply)
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B. Software
C. Office
D. Windows NT
E. DOS
F. Macintosh
G. Unix
H. NetWare
I. App. Development (Database) J. User Software
J. Business/Financial Products
K. Manufacturing/Production
L. Internet Products
M. Other _____
4. When do you buy computer software products
A. Do you buy, regularly, recommend or approve the purchase of?
1. Once a month
2. Once a year
3. Once every few years
4. Never
B. Do you buy, regularly, recommend or approve the purchase of?
1. Once a month
2. Once a year
3. Once every few years
4. Never
C. Internet browsers
D. Web authoring/management tools

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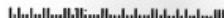
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with extensive relocation assistance from his new employer, Barnett Banks.

"My in-laws have lived in Jacksonville for five years, and my wife and I really liked the area when we visited," D'Erasmo says. "We came to be close to family, to boost our careers and to enjoy a better quality of life."

To lure D'Erasmo south, Barnett paid the bills for movers, airline tickets and temporary living expenses that included a rental car, hotel room and meals.

That's standard procedure, according to Jim Strong, a relocation administrator at Barnett.

Strong says the bank's own relocation department expects to move some 600 people this year to meet its staffing needs in Florida and other states.

The bank assists with selling, moving and buying homes as well as finding jobs for working spouses, as needed.

slower pace and recreational opportunities," Desjardins says.

The irony and the ecstasy

By **DEBORA COOPER**
GAP consultant
Price Waterhouse
Atlanta

About seven months ago, Cooper and her husband left their Philadelphia jobs and their Delaware home. They had moved to Atlanta for better career opportunities and to be closer to Cooper's southern roots in Louisiana.

On her first day in the new job with Price Waterhouse, Cooper reported to the Atlanta office. On her second day, she was on a plane to New Jersey. She's been on assignment there since.

"We had visitors at our home in Atlanta who have seen more of the city than I have," says Cooper, who flies there for weekends.

While she enjoys the challenge of consulting life, the constant travel has thwarted Cooper's plans to get acquainted with the new city. Yet she continues to be optimistic.

"I've moved from Louisiana to Wisconsin to Delaware to Georgia, and this last move was the best because Price Waterhouse took care of everything for us," Cooper says.

Going to Kansas City

By **Debra Cooper**
GAP consultant
Price Waterhouse
Atlanta

If you're going to put a technical center in a central location, it makes sense to have it in the center of the country. Sprint PCS soon will have a videotape available for candidates nationwide to view at their leisure to help them decide if they want to be at the center of this new wave in telecommunications."

Sprint PCS
Corporate Communications
Corporate Communications
Corporate Communications
Corporate Communications

Over the next several months,

Sprint PCS will hire 100 or more IT pros with a wide variety of skill sets to a

new company launched by Sprint and three cable TV investors. Tolander says he expects to relocate some 200 individuals and their families to Sprint PCS headquarters in Kansas City by June.

Relocation packages vary according to job levels, but Tolander says the company offers competitive compensation and benefits plus generous relocation plans to entice the best and brightest to join Sprint PCS.

"Sprint PCS is creating a national telephone company without the telephone poles and wires," Tolander says. "If there are information technology professionals who are unique thinkers and want to contribute to changing the way America communicates, we're looking for them."

O Canada!

By **Mark Hartz**
"Stay in touch with friends from the old neighborhood — including business contacts and IS recruiters — who may help you make a fast getaway when you've had enough."

Hartz in 1994 spent six months implementing a computer system in Toronto, returning to his Delaware home on weekends.

During the international stint, Hartz decided he'd like to live in Canada. Glad to have an experienced person to handle support of the new system, his employer moved Hartz to Toronto in January 1995.

A year and a half later, Hartz wanted to come home. "I had one person supporting me too much," he says. "And I was used to living in Delaware, where there are no taxes, Canada has a high cost of living and high taxes."

Hartz was paid in Canadian dollars and received a raise to cover the difference in the exchange rate, but he calculated he was actually earning less net pay by living and working in Canada. When he appealed to his management to bring him back to the U.S., it agreed to do so within about a year.

To speed up his return, Hartz found a job in Philadelphia with Price Waterhouse.

Photo: AP/Wide World
Photo: AP/Wide World
Photo: AP/Wide World
Photo: AP/Wide World

Violette is a freelance writer in East Brunswick, N.J.

Relocation: The right move for you?

IS professionals who are hesitant to take a relocation job or assignment can check out the following Web sites and resources to help decide.

— **The Relocation Universe**
Web site of the Employee Relocation Council
www.ercc.org

— **Relocation**
A software package in Windows 3.1, Windows 95, DOS or Macintosh formats.
From Right Choices, Inc. (800) 872-2294, \$79.95.
From you calculate the costs of moving to and living in a variety of cities in the U.S.

— **The Relocation Salary Calculator**
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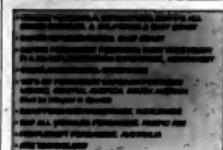
— **Relocation Journal**
An online magazine that helps employers relocate employees. www.relojournal.com/main.html

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REGIONAL SCOPE**New York City/Northern New Jersey**

Client/server skills rule, but if you want to work in the Big Apple, it pays to have a way with words

CAN WE TALK? Both client/server and mainframe skills will serve information systems professionals well in New York. But to reap the rewards this world-class city has to offer, the gift of gab is required.

IS managers across the country consistently rank interpersonal and business communication skills among the top qualities they look for in IS prospects. But perhaps nowhere is the craft of eloquent confabulation more important to IS success than the New York metropolitan area. The frenetic pace of corporate life, coupled with the chaos that characterizes New York, demands succinct discourse.

"New York is not a patient place," says Scott Dindale, a vice president and chief information officer at BMG Entertainment Co. "You don't have time to explain yourself or gain credibility. ... You must be able to communicate quickly and pointedly and be able to listen just as well because you're surrounded by people who are equally articulate."

But for the IS pro who wants it all, New York and Northern New Jersey is a booming IS job market.

Computer-related occupations will make up seven of the 10 fastest-growing careers in the city through 2005, the New York State Labor Department forecasts.

Although unemployment in the area is higher than the national average, a growing new-media industry, the concentration of transaction-driven businesses and the overall diversification of local industry have pushed IS activity into overdrive.

Companies can't hire IS professionals fast enough to handle client/server migration and development projects and the year 2000 date problem.

"Given the combination of

OPPORTUNITY AWAITS

15 jobs are among the hottest growing in New York

POSITION	GROWTH RATE
Computer systems analysts	6.0%
Computer programmers	5.5%
Computer support specialists	4.2%
Computer systems engineers	3.0%

Source: New York State Department of Labor's Jobless Benefit Annual projections, 1994-2005; for further info contact state labor stats and trends division.

different types of companies here, their size and the scope of their enterprises, they have significant staffing needs," says Mark Mullall, director of Chubb Professional Resources, a unit of Chubb Computer Services, an IS recruiting, placement, training and consulting firm in Parsippany, N.J.

"Then you add in all the technology initiatives that are taking place at each organization, and you have very strong re-

cruiting demand across the board," Mullall says.

Database administrators, World Wide Web developers, help desk technicians, systems and network administrators, application developers, network architects and mainframe programmers are in strong demand. Sought-after technical skills include Unix (especially on Sun Microsystems, Inc., Hewlett-Packard Co. and IBM platforms), Windows NT, SQL Server, Oracle, Sybase, C, C++, PowerBuilder, Visual Basic, and networking hardware expertise.

Financial services, banking, insurance, pharmaceuticals, health care, entertainment, retailing, IS consulting and new media are strong segments for IS professionals in the area.

MORE THAN FINANCIAL SERVICES

"As recently as three to four years ago, the financial services industry drove the IS market here," says Steve Markman, a vice president at PricewaterhouseCoopers in Manhattan. "Now companies across all industries are catching up and moving to client/server. And with the advent of the Web, we've seen developments in advertising agencies, entertainment companies, Internet and intranet start-ups and consumer products company."

Mullall says the market can offer job seekers attractive compensation and relocation packages. He says a certified Windows NT senior analyst with several years of networking experience can command a six-figure salary in New York and nearby in that Northern New Jersey.

The financial services industry offers the best compensation packages to IS professionals, Markman says. "But there's a price that goes along with that in terms of what it

New York and Northern New Jersey is a booming IS job market

takes out of your hide."

Demand is high and salaries are sweet, but finding a job in New York is a job in itself, IS managers, recruiters and staffers say. Although companies in the area are scrambling for technical skills, the volume of resumes they receive affords them the opportunity to hold out for candidates with the best combination of business experience, technical know-how and interpersonal finesse.

It's best to arrive in New York with at least a few years' experience, Dindale says. Because most companies have very specific applications needs and short development cycles, general entry-level positions are the weakest segment of the IS job market in the area.

After verbal and technical skills, persistence may be the most important personal attribute for surviving corporate IS in the area. The competition is fierce, and the pressure doesn't let up when the workday ends.

"It's a place of intense energy, and these are people who don't react well to being in an environment that just vibrates around them all the time," Dindale says. "They get overextended or feel the world is collapsing in on them. And then other people just feed on that. If you feed on energy, this is a great place to be. If you find constant hubbub distracting or upsetting, it's not."

Goff is a freelance writer in New York.

ONLINE RESOURCES**NEW YORK CITY**

New York State Department of Labor Career Resource Library: www.state.ny.us/Library.htm

NYC Link: The Official New York City World Wide Web Site: www.citylink.ny.gov

The All New York City Super Resource Guide: www.city.net

New York Music: www.nymusic.com

Montclair Styles Website: www.montclair.com/webcams/nytaste.htm

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 - MULTI-MEDIA STRATEGISTS
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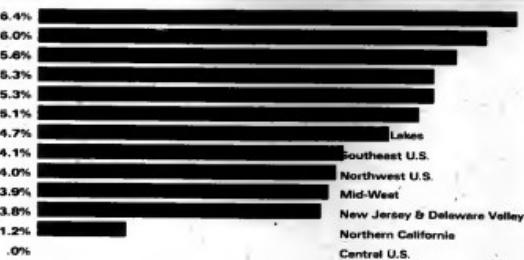
Industry Hiring Trends



Survey Basis: 145 technology firms involved in Biotechnology

Survey conducted between August '96 and November '96.

Regional Growth Analysis



CorpTech, a directory publisher in Woburn, Mass., tracks the U.S. 45,000+ technology manufacturers. This survey relates to the 31,129 tracked firms with fewer than 1,000 employees.

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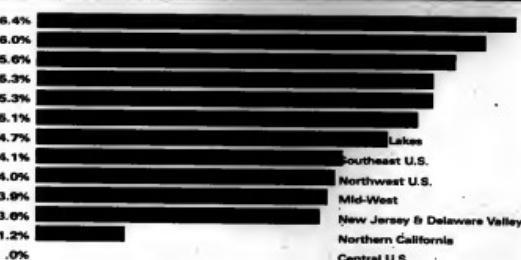
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Marketplace

Burgeoning market offers two categories of tools for language-based and visual-based developers

JAVA DEVELOPMENT TOOLS

FULL STEAM AHEAD

By Tom Duffy

With all the hype, it's easy to forget Java's young age. And Java development tools are still relatively immature. Virtually all are first-generation products, and some, such as Symantec Corp.'s Visual Cafe, have been on the market for less than two months.

Developers can look to two main categories of development tools for help. "Ground-up" development tools, such as Symantec's earlier Java product, Cafe, are geared toward technically oriented software developers who are comfortable with language-based tools.

Fast-growing rapid application development (RAD) tools are quickly gaining popularity with corporate information technology departments, says Jim McLaughlin, a senior industry analyst at Giga Information Group in Santa Clara, Calif.

Those visual-based and graphically oriented tools are often used by webmasters and non-programmer types.

By virtue of being first to market in March, Cafe is easily the top-selling product, McLaughlin says. But Microsol Corp.'s Visual J++, released last month, could threaten Cafe's dominance before long.

By the end of next year, J++ probably will pass Cafe in commercial units shipped, says Evan Quinn, a research director at International Data Corp. in Framingham, Mass.

SunSoft, Inc.'s Java Workshop, with its browser-based design, is the most unique of the tools but places a distant third, McLaughlin says.

RAD TOOLS

Some analysts say corporate IT professionals eventually will come to rely more on one or an-

other of the RAD tools on the market. Among them are Visual Cafe, [Picture] from Roger Wave Software, Inc. and Cosmo Code from Silicon Graphics, Inc.

It's likely that Visual Cafe eventually will dominate the market in the Windows environment, McLaughlin says. "It's the best one and the easiest to use," he says. "The less-sophisticated users far outnumber the more-sophisticated ones."

Some corporate IT departments, particularly in the financial services market, are already building mission-critical applications in Java, McLaughlin says. But Quinn says a cautious approach is in order. He says developers might want to let the language mature for another year before they use it for mission-critical applications.

Duffy is a freelance writer in Somerville, Mass.

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Burgeoning market offers two categories of tools for language-based and visual-based developers

JAVA DEVELOPMENT TOOLS



By Tom Duffy

With all the hype, it's easy to forget Java's relative youth. And Java development tools are still relatively immature. Virtually all are first-version products, and some, such as Symantec Corp.'s Visual Cafe, have been on the market for less than two months.

Developers can look to two main categories of development tools for help. "Ground-up" development tools, such as Symantec's earlier Java product, Cafe, are geared toward technical, early or intermediate Java developers who are comfortable with language-based tools.

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Duffy is a freelance writer in Somerville, Mass.

Java development tools

Cafe

Symantec Corp., Cupertino, Calif. www.symantec.com
Cafe is available for Windows 95, Windows NT and Macintosh. Its basic, straightforward approach to development contributes to its lead in the market. The next generation of the product will feature Project Studio, which will include a variety of business components that allow charting, graphing, database access and spreadsheet support.

Visual J++

Microsoft Corp., Redmond, Wash. www.microsoft.com
Visual J++ comes bundled with Bullspread Corp.'s Design Pro, a data base application that links Microsoft Markup language pages to servers that search for information. J++ allows debugging at byte-code level and allows code-level interoperability with ActiveX controls. J++ runs only on Windows 95 and Windows NT.

Java Workshop

SinSoft, Inc., Mountain View, Calif. www.sinsoft.com
Java Workshop, the only browser-based development tool, is also the only product that runs on Unix, Solaris, Windows 95 and NT. The next generation of the product promises to allow remote debugging.

RAD tools

Factory

Rogue Wave Software, Inc., Corvallis, Ore. www.roguewave.com
Factory's stand-alone test mode will let the prototype run outside the Factory environment, just as a user would see it, without generating source code. It doesn't include an integrated debugger, but its open environment allows integration of third-party tools.

Cosmo Code

Silicon Graphics, Inc., Mountain View, Calif. www.sgi.com
Cosmo with Cosmo Create and Cosmo Worlds, Cosmo Code provides a tool set for authoring World Wide Web pages, Java programming and debugging and building Virtual Reality Modeling Language worlds. It boasts intuitive usability. But it's available only for SGI computers.

Visual Cafe

Symantec
Considered to be the easiest to use of the RAD tools, Visual Cafe provides support for Netscape Communications Corp. Open Network Environment applications for intranets through dragging and dropping of Netscape Internet Foundation Class components.

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Finance & Investing

BUSINESS IS BOOMING

Internet sparks investors' entrepreneurial spirit

It used to be that you'd need a whole lot of cash and serious credentials — or at least good connections — to start an investment business.

By Rosemary Cafasso

Not anymore.

A growing number of individual investors have been bitten by the entrepreneurial bug and, thanks to the Internet, are finding it's a snap to start their own operations.

It's difficult to track the number of new online investment services, industry observers say they are popping up on a regular basis. "We have so many people knocking on our door wanting to work with us or our Web site," says Bruce Wagner, director of computer operations at the National Association of Investors Corp.

Some of the new services are World Wide Web sites that provide investment resources, newsletters and chat groups.

"It started out as my home page," says Doug Gerlich, an individual investor who works in fundraising by day and runs www.investorama.com, a popular

Web site for investors, on the side. "It grew from there."

In part, operations such as Investorama are an outgrowth of a trend among individual investors to turn to their peers — ahead of investment professionals — to learn about investing.

So for many investors with an entrepreneurial itch, there's no struggle with the traditional headaches of a start-up, such as bookkeeping and promotion. Instead, running an online operation requires two things: a lot of investing knowledge and some technical know-how to maneuver around the Internet or design a Web home page.

"This is the true spirit of the Internet — having information

expenses can be minimal and often consist of only the time needed to run the operation and monthly Internet access fees.

Several investment entrepreneurs say they aren't making money on their online endeavors. To some degree, that works in their favor. If they were compensated, they could be perceived as investment advisers and find themselves in hot water should a customer claim to have received bad information from them.

But these folks say they are more focused on the challenge of running their own operation online. Without the Internet, it likely would have been too costly and time-consuming to get involved in the investment community. Further, some say they hope to parlay their current operations into lucrative opportunities in the future.

SPREADING THE WORD

Earlier this year, Bob Davis launched "The Napaage Newsletter," a bimonthly report that provides analysis and commentary on stocks (rmdavis@ix.netcom.com). Long term, he said he would like to establish himself as a key Internet "content provider" to the investment world.

Davis has an MBA from Harvard and more than 15 years' experience as a chief financial officer, so he knows his way around financial reports. He left his most recent CFO post in early 1995. Since then, he's done some consulting gigs and managed his investment.

Davis says that as a private investor, he had long documented his research for his personal use. He was also growing increasingly frustrated by what he considered erroneous investment information on public bulletin boards.

So he started posting messages on these boards to let people know that he would provide them with his own research if they were interested.

"I have long been amazed and discouraged by some of the postings I see on various bulletin boards," says newsletter publisher Bob Davis.

Before long, he was sending his research to hundreds of investors. In August, he decided to turn this effort into an official newsletter operation. Davis now has 1,700 subscribers.

It's a bare-bones operation. Davis doesn't charge for the newsletter, so he doesn't spend time on bookkeeping. He does spend more than half of his time each week on research and writing. His only real cost is the \$20 flat-rate fee he pays his Internet access provider.

Davis uses Netpage Communications Corp.'s Navigator 3.0 to manage distribution. He splits his subscriber list into four small mailing groups and broadcasts the newsletter to them twice monthly.

CAN WE TALK?

Another online entrepreneur is Doug Blair (dbair@ix.netcom.com), founder of the GreatStocks Project. Blair worked at IBM for 13 years. In 1994, while working for his consulting business in Texas, he decided to grab a buyout package. Since then, he's been officially unemployed.

Blair is another investor who wasn't impressed with the investment content on some of the public bulletin boards. "There's a lot of junk out there," he says.

So he launched a chat group in May and now has 750 members. GreatStocks runs as a lattever, which means members essentially zap electronic-mail messages to one another.

Blair found an inexpensive Internet service provider in Philadelphia and uses its E-mail service to manage the listserve. He says it will cost him only "a few hundred dollars" this year to run his operation.

He spends his time moderating the exchanges between subscribers and focusing on keeping riffraff out of the GreatStocks forum.

"I just started it as an experiment," Blair says. "I can't believe the way it took off."

The Week in Stocks

Gainers



P E N D I T

Retired (1) No.
Hewlett-Packard
IBM Corp.
IBM Computer Corp.
Intel Corp. On Unit
Motorola Inc.
Siemens AG
Siemens Oldmark

Retired (1) No.
Hewlett-Packard
IBM Corp.
IBM Computer Corp.
Intel Corp. On Unit
Motorola Inc.
Siemens AG
Siemens Oldmark

D O L A R

Texas Instruments
Autodesk On-Line
Hewlett-Packard
McGraw-Hill Publications
Motorola Inc.
National Semiconductor Tech.
Lattice Semiconductor Corp.

Texas Instruments
Autodesk On-Line
Hewlett-Packard
McGraw-Hill Publications
Motorola Inc.
National Semiconductor Tech.
Lattice Semiconductor Corp.

I N D U S T R Y A L M A N A C

Symantec's cloud lifts

Symantec Corp. (Nowling: SYMC) investors recently received a lot of bad news when the company announced that a legal cloud had lifted. President and CEO Gordon Zubkoff was cleared of trade-secret charges that against him nearly four years ago by ex-counsel Gene Wang from Berjord International, Inc. (Nowling: BORJ).

At the time, Berjord founder Philippe Kahn — who recently resigned as chairman — had taken his trade secrets to his new employer. The district attorney's office in Santa Clara County, Calif., filed charges.

On Nov. 20, the district attorney's office requested that the charges be dropped and said Zubkoff was no longer under indictment.

Symantec's stock showed that day at \$24.00 per share, up 10 cents. The stock price started Thanksgiving week at \$14.00 per share pre-cloud. Symantec has traded at a high of \$40.75 per share and a low of \$23.75 per share in the past 20 months.

Although interest in the case had died down, the legal battle took time away from the company's business, says Jim W. Orr, a senior analyst at A.C. Bell & Associates, Inc. in St. Louis. "It's not that it's a major issue," he says, "but it's one of those things."

Management, which has been heavily involved by Berjord investors, shareholders and media attention, has made an unusual move that could eventually affect the stock price (see related story, page 5). It recruited Dafford Thomas, a former Apple Computer Inc. executive, as chairman and CEO.

"Our hope is to have soon to determine what the impact on Symantec stock will be," Orr says. "The company has had a real struggle in the last several years." Orr says, "I want to know what potential he sees there." — *Rosemary Coffey*

Symbol	Name	Per Share	Wk Chg.	Wk % Chg.	Mo Chg.	Mo % Chg.	YTD Chg.	YTD % Chg.	52-Week High	52-Week Low	Div	Ex-Div	Yield	EPS	PE Ratio	Market Cap	Stock Price	Stock Price	Stock Price
COPW	20.00	\$4.00	+2.00	+5.26%	-0.50	-1.25%	+1.00	+5.00%	20.00	14.00				0.00	20.00	\$1.00	2.00	2.00	2.00
AVT	20.00	\$4.00	+2.00	+5.26%	-0.50	-1.25%	+1.00	+5.00%	20.00	14.00				0.00	20.00	\$1.00	2.00	2.00	2.00
ASMD	18.00	\$6.75	+0.75	+11.76%	-0.50	-2.78%	+1.00	+1.43%	18.00	13.00				0.00	18.00	\$0.75	2.40	2.40	2.40
BAY	18.75	\$6.75	+0.75	+11.76%	-0.50	-2.78%	+1.00	+1.43%	18.75	13.00				0.00	18.75	\$0.75	2.40	2.40	2.40
BLI	18.00	\$6.75	+0.75	+11.76%	-0.50	-2.78%	+1.00	+1.43%	18.00	13.00				0.00	18.00	\$0.75	2.40	2.40	2.40
CT	14.00	\$10.25	+0.25	+2.00%	-0.50	-3.57%	+0.50	+3.57%	14.00	10.00				0.00	14.00	\$0.50	28.00	28.00	28.00
CSCO	21.00	\$26.75	+2.00	+9.23%	-0.50	-2.22%	+1.00	+4.76%	21.00	17.00				0.00	21.00	\$1.00	22.00	22.00	22.00
CYTR	20.00	\$24.00	+2.00	+8.33%	-0.50	-2.50%	+1.00	+5.00%	20.00	15.00				0.00	20.00	\$0.75	26.00	26.00	26.00
DE	20.00	\$24.00	+2.00	+8.33%	-0.50	-2.50%	+1.00	+5.00%	20.00	15.00				0.00	20.00	\$0.75	26.00	26.00	26.00
DSC	12.00	\$12.00	+0.25	+2.08%	-0.50	-4.17%	+0.50	+10.00%	12.00	10.00				0.00	12.00	\$0.50	24.00	24.00	24.00
EDS	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
EVAN	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
EVAN	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
FBI	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
GOOG	10.00	\$10.00	+0.25	+2.50%	-0.50	-5.00%	+0.50	+10.00%	10.00	8.00				0.00	10.00	\$0.50	20.00	20.00	20.00
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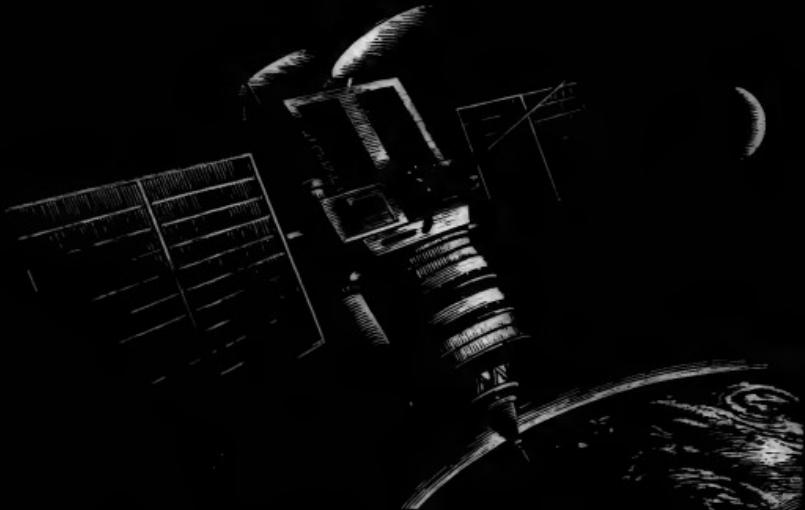
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COMMENTARY

The new PDAs: godsends or gadgets?

David Coursey

Will Microsoft's Windows CE finally let personal digital assistants (PDA) take off? The units, dubbed handheld PCs, were a hit at Comdex/Fall '96.

But the fact that they demo well doesn't necessarily mean they solve a problem. Sometimes, in fact, they cause problems. I've heard that the Pocket Word and Excel applications that ship on the machines have compatibility problems with Microsoft's Office 97, which will ship about the same time power users start getting their Windows CE machines.

Microsoft deserves special points for coordination on this product launch. The people who will jump at upgrading to Office 97 are the same dollars-burning-in-their-pockets types who don't mind paying \$400 for yet another PDA. If the interoperability problems I've heard about are true, imagine the surprise of those power purchasers when they discover that Word on the PDA won't work seamlessly with Word 97.

The question for IS organizations is this: Is the handheld PC a nice, inexpensive way to outfit users who don't quite merit the full laptop treatment, or is it a terrific answer to a question nobody has asked?

Microsoft has made much of the fact that Windows CE devices offer automatic synchronization with desktop machines. I've been using U.S. Robotics' Pilot PDA, which synchronizes relatively easily with the contact manager we use around the office. Pilot costs about half as much as a Windows CE machine and fits in a shirt pocket. If all you need is to carry around names, addresses, to-do

lists, notes and your calendar, Pilot is wonderful — as long as it really talks to your desktop application. Check this before you buy.

Pilot also reads my handwriting — well, something that resembles handwriting — via an application called Graffiti. Bill Gates says that although handwriting recognition would be nice, the technology isn't yet good enough. However, many of us have been happily scribbling away for a couple of years now. Graffiti made its first appearance on Apple's Newton. Yes, we had to learn a special shorthand, but it didn't take more than an hour or so, and I get nearly 100% recognition in return.

On the other hand, Pilot is a very limited platform. One of the pitches for Windows CE machines is that these are "real" PCs — albeit small ones. As to whether the handheld PC can become a less expensive replacement for notebook computers, that's debatable. For in-

stance, one of the major uses of notebook computers is for presentations. Hand held PCs have grayscale screens, and none of the models that have been released offer a way to attach a color display. Furthermore, the handhelds built-in screens are tiny. If the end users in your company who are screening for laptops are salespeople or managers, how happy will they be about that?

But if you need a tool is basic word processing, scheduling, a phone book, E-mail and the occasional simple spreadsheet, then substituting a Windows CE machine might make sense. If you're in the market, be sure to check out Philips' Velo machine.

I keep hearing about mysterious corporate customers planning to buy handheld PCs for everyone whom they can't afford to set up with a notebook PC, but I've yet to see it. And in any case, I'm not sure how pleased the recipients would be. As soon as a demonstration machine arrives, I'll report on my experiences.

Courtesy (david.coursey@comcast.com) is an industry analyst, consultant, best-selling author and editor/publisher of "courtesy.com," an electronic newsletter available at www.courtesy.com.

LAN can choke faster desktops

Charles Babcock

In one corner, we have the defending champion: the fat client, looking pudgy around the waist and sagging a bit in the rear. In the opposite corner, we have the challenger: a lean, mean, fighting machine, the network computer, eager to take on the world.

If you're responsible for LANs on which one do you bet? Doesn't it help your position if the network computer comes out strong and pummeling?

If you're asking yourself these questions, you won't come up with the right answers, because it doesn't matter which one wins. In either case, your LAN is going to need more bandwidth — lots more bandwidth. PC managers should forget about plans to upgrade desktop hardware and applications until they accurately gauge the impact on their bandwidth needs.

Didn't the network used to be an afterthought?

The network computer will depend on the LAN to download applications from a local server and to move data from around the corporate network and the Internet.

The fat client, now frequently an Intel/Pentium machine, plays a major role in client/server systems, downloading data from legacy systems and exchanging information with other client/server applications. It's also an Internet machine, with its users more and more intent on loading up a 56K- or 24-bit hard drive.

Both threaten to burn the existing data pipes. The increase in network traffic is the development over the past year that was the hardest to plan for, catching many IS managers off guard, according to Gartner Group analysts who recently looked at trends in

client/server computing. So the question you should be asking is: How can you measure your need for bandwidth? How can you anticipate the increase in demand that will follow upgrading to Pentium? Is there anything you can do to discourage growth in demand? (Probably not, analysis says, but you might try monitoring Web usage.)

Where does the increased bandwidth come from? Think in terms of high-speed LAN switching, such as switched Ethernet or even Asynchronous Transfer Mode, as your long-run solution and 100Mbps/1Gbit/sec Ethernet as a short-term answer.

But the main point is that PC management now consists of paying attention to the effect on the pipe before a hardware upgrade is implemented or an application update occurs.

NeTegrity, Inc., is a Waltham, Mass., firm that attempts to address a nagging security concern:

the scattered nature of an organization's defenses.

The firewall is the first line of defense that keeps everyone who gets through the firewall should have access to your E-mail system or sensitive in-house applications. So another constant point of user log-in and authentication is installed on an application-by-application basis, until the task of maintaining organizational security dwarfs the number of people available to do it.

neTegrity's SiteMinder tries to pull the elements back together by concentrating user authentication in a central database. Firewalls and other security products can be primed to work with the central system. System audits and security administration can likewise take place from the same central control point.

The Yankee Group reports that the fragmented nature of security is a big concern to IS managers. But security integration products amounted to a paltry \$300,000 in sales last year. Those products will represent a \$1.3 billion market by 2000, The Yankee Group says.

Babcock is Computerworld's technical editor. His Internet address is charles_babcock@comcast.com.

at CW

Dispatches & Images from the rings of the electronic frontier

The Back Page

Domain games

Now there's a real estate broker for Internet addresses. Multimedia Results (www.multimedia-results.com) in Beverly Hills, Calif., charges a 10% commission for selling Internet domain names. Speculators grabbed up many popular names and now want to cash in. Some domains on the market include www.holiday.com, www.papaw.com, www.grandchildren.org (\$75,000) and www.egg.com (\$100,000).

—HKG, News Service

What group has a Web site at www.pig.com? None, it's a human page of the Porkers, a group of all Americans, but most recently it was the site for the Butcher Group of Alberta, The golfers bought the rights to the PIG.com domain for \$12,000 and agreed to return a link to the Canadian speed growers. —Contributed by Ruth and Bobbi.

Lawsuits and controversies involving Internet domain name disputes have spawned the nonprofit American Association of Domain Names (www.domains.org). The fledgling group has a newsletter and hopes to provide legal support for members. Who gets sued? Animal dildos are \$15.

ANOTHER YEAR 2000 PROBLEM

Government scientists predict the next major outbreak of violent solar flares, called "solar cycle 22," will occur around March 2000. These sun storms produce blasts of electromagnetic radiation that can disrupt radio and satellite communications, as well as navigation systems and create massive power surges and blackouts. The previous solar storm in 1989 triggered a costly power outage in Quebec.

Robots rule

For the first time, a robot has programmed another robot without human intervention, said a Reuters report on an experiment at Reading University near London. "This is a major breakthrough for machine-kind," one cybernetics expert said. Via the Internet, a robot in England taught a tricycle-like robot in the U.S. to navigate using its ultrasound sensors, like a bat.

Lifestyles of home-PC buyers

THEY DO:

- Download files
- Belong to a health club
- Take U.S. Business trips
- Buy on a business club
- Listen to daytime jazz radio
- Listen to classical radio
- Listen to all-news radio

THEY DON'T:

- Smoke menthol cigarettes
- Go to rodeos
- Belong to a fraternal order
- Follow professional wrestling
- Watch early evening weekend TV news
- Watch morning weekday TV
- Listen to big band radio

Source: Computerworld's 1996 U.S. PC User Survey

Inside Lines

Put away the sharp knives

Be thankful you didn't eat your Thanksgiving turkey with the crew at IBM. A few months ago, Let's Encrypt users were spreading nasty comments about one of IBM's own babies: OpenDoc. IBM President Jeff Papows said that as a technology, it stinks. And he vowed he would never use it in Notes. IBM maintained that OpenDoc would never be plugged in to Notes. Well, Papows is at it again. He told Computerworld he wants nothing to do with OpenDoc and said even IBM is having second thoughts. There's a turkey in here somewhere, though it's not on the Thanksgiving table.

Chilling effect on client/server

Digital Consulting is preparing 15 officials for the migration to client/server in more ways than one. The company is holding its annual Database and Client/Server World conference on Nov. Pier West in Chicago. The idea seems to be that if attendees can stand being on a pier on Lake Michigan in the middle of December, they must be tough enough for a migration to client/server.

Out monkeying around, will ya?

Digital's new ad campaign featuring a chimp may be doing well with the folks in marketing. But judging from the exchanges in Digital's newsgroup over the past month, some engineering types apparently are as bad as hell to have their products represented by simians. "The feeling is that even an ad featuring a slice of burnt toast may have motivated customers," said an employee on a Usenet newsgroup.

Take my tape deck, please

Some hotel rooms have been renovated to include safes big enough to hold laptops. Now the 1997 Lexus ES 300 sedans offers a glove box large enough to hide a laptop computer. Security experts say most laptop thefts are from offices or cars, so the innovation will be welcomed by road warriors.

Star Trek viewers: The Tech Generation

The recent opening of Star Trek: First Contact drew huge audiences in San Francisco, lots of T-shirts and gray hair in ponytails. This group wasn't quiet about expressing an opinion: an opening commercial for The Microsoft Network that preceded the movie drew boos, hisses and catcalls. Must have been a Unisys crowd.

AT&T is a TI is a TI

AT&T has renamed a host of its business offerings to make ordering easier. Putting on their thinking caps, AT&T management decided to call T1 service, "T1 service," instead of AT&T Account T1 service. Now, if only we could get rid of those pesky acronyms.

Reno Air grounds surfers

The IT department at Reno Air, Reno, Nev., secretly configured employees' Web browsers to bounce back to the company's home page whenever users tried to access porn sites. "We get calls from people saying they're trying to go somewhere, and they just keep getting the home page," said Randy Roget, a systems engineer at the airline. "We ask them where they're trying to go, and they say, 'I'm just trying to go somewhere.'"

What matters and Web surfers should have given thanks last week that the Internet remains largely free. The day before Thanksgiving, The Associated Press reported the loss of a Web site that had provided one of the few remaining sources of independent news from Belarus. The site's author in Minsk had posted photos and information about attacks by police during a rally protesting the increasing restriction of newspapers, radio stations and political opposition by President Alexander Lukashenko. Now the page states only "Sorry! The Entente of Democracy Have Destroyed Our Server!" Keep the news flowing freely here. Call Computerworld news editor Patricia Kieff at (508) 850-8189 or E-mail her at patricia_kieff@cw.com.



It's hard for a second-tier tire company with a thin marketing budget to get consumers' attention. So Toyo Tires at Cypress, Calif., has deployed computer kiosks at retail tire stores to raise brand awareness and guide consumers through the tire-selection process. The kiosks were designed by Frontier Media Group in Malvern, Pa., and advertising agency Ralz Hobsch in Newport Beach, Calif. -Studios claim 50% to 80% of people going into a tire store looking for advice and their brand choice can be influenced," said advertising executive Dave Hobsch.

Send your site contributions to webkits@cw.com. If your item is used, you'll receive a cool T-shirt.

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Dispatches & Images from the edges of the electric frontier

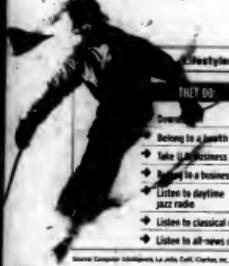
The Back Page

Domain games

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What group has a Web site at www.pga.com? Now it's the home page of the Professional Golf Association, but until recently, it was the site for the Potato Growers of Alberta. The golfers bought the rights to the PGA domain for \$15,000 but agreed to retain a link to the Canadian spud growers. —Contributed by Rickard Bebbie

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Send your alt.cw contributions to altcw@cw.com. If your item is used, you'll receive a cool T-shirt.

Source: Computer Intelligence, Le Wolfe Coll., Clarendon, Mass., Arlington, Va.

The Back Page

InsideLines

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It should be you and your Thanksgiving turkey with this crew of meat. A few months ago, Letters activists were sprouting many complaints about one of IBM's own babies—OpenDoc. James President, IBM's Project Manager for OpenDoc, told *Computerworld*, "I would never use it in Notes. IBM understood that OpenDoc very well might be plugged in to Notes. Well, Peacock is at it again. He told *Computerworld* he wants nothing to do with OpenDoc and said even IBM is having second thoughts. There's a turkey in here somewhere, and it's not on the Thanksgiving table."

The knife effect on client/server

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Soft, smoky, smoky around... will you?

Digital's new ad campaign featuring a chip may be doing well with the folks in marketing, but failing from the exchanges in Digital's nongroup over the past month, some engineering types apparently need to hold to their products represented by a silicon. "The idea is that first, even on an otherwise sleek slice of silicon we may have smoke customers," said one employee on a Usenet newsgroup.

Tobacco bags deck, please

Some laptop users have been recommended to include miles big enough to hold laptops. Now this spiffy Lattice III case makes a glove box large enough to hide a laptop computer. Recently acquired yet sleek laptop users are from office or car, so the innovation will be welcomed by road warriors.

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AT&T is TI is TI

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Bone air grants service

The IG department at Bone Air in bone, bone, especially configured employees' Web browsers to logons back to the company's home page whenever users tried to access some other. "We got calls from people saying they're trying to go somewhere, and they just keep getting those pages," said Mike Indred, a systems engineer at the office. "We had them change their logins to something else, and they say, 'I'm just getting those messages.'"

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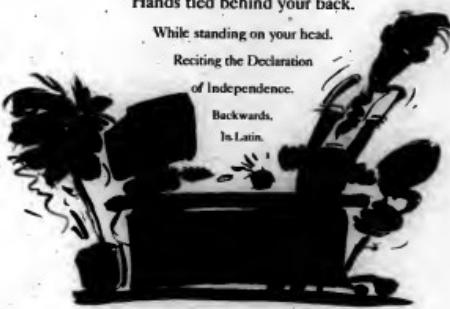
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